Vol. 31, No.6 June, 2020

ISSN 1029 - 385 X (Print), ISSN 2519 - 7134 (Online)

MEDICAL FORUM MONTHLY

APNS Member | CPNE Member | ABC Certified

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"Medical Forum" Monthly Recognised and Indexed by

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- Registered with International Serials Data System of France bearing ISSN No. 1029-385X Since 1992
- Registered with Press Registrar Govt. of Pak bearing No. 1221-B Copr. Since 2009
- ABC Certification Since 1992
- On Central Media List Since 1995
- Med. Forum Published from Lahore Since 1989
- Peer Review & Online Journal
- Electronic Publication of Journal Now Available on website: www.medforum.pk

MEDICAL FORUM MONTHLY

ISSN 1029 - 385 X (Print) ISSN 2519 - 7134 (Online)

APNS Member | CPNE Member | ABC Certified

Peer Review Journal | Online Journal | Published Since 1989

e-journal available on: www.medforum.pk

Medical Forum Recognized and Indexed by

PMDC-IP-0048 (1998), Pastic and PSA, Isd (2000), Medlip, Karachi (2000), NLP, Isd (2000), Pakmedinet, Isd (2011), Excerpta Medica, Netherlands (2000), EMBASE Scopus Database (2008), Index Medicus (IMEMR) WHO (1997), ABC Certification, Govt. of Pak. (1992), Central Media list, Govt. of Pak (1995), Press Reg. No.1221-B Copr (2009)

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Published By: Dr. Nasreen Azhar, Gohawa Road, Link Defence / New Airport Road, Opposite Toyota Motors, Lahore Cantt. Lahore. **Mobile Nos.** 0331-6361436, 0300-4879016, 0345-4221303, 0345-4221323. **E-mail:** med_forum@hotmail.com, medicalforum@gmail.com**Website: www.medforum.pk**

Printed By: Naqvi Brothers Printing Press, Darbar Market, Lahore

Rate Per Copy: **Rs.1500.00**

Subscription Rates Annually: Pakistan (Rs.15000.00), USA & Canada (US$ 500.00), China, Japan, UK &Middle East (US$ 450.00)

Med. Forum, Vol. 31, No.6June, 2020 ISSN 1029-385-X (Print) ISSN 2519-7134 (Online)

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Editorial

Beneficial Effects of Ginger

Mohsin Masud Jan
Editor

Ginger has a very long history of use in various forms of traditional/alternative medicine. It has been used to help digestion, reduce nausea and help fight the flu and common cold, to name a few.

Ginger can be used fresh, dried, powdered, or as an oil or juice, and is sometimes added to processed foods and cosmetics. It is a very common ingredient in recipes.

The unique fragrance and flavor of ginger come from its natural oils, the most important of which is gingerol.

Gingerol is the main bioactive compound in ginger, responsible for much of its medicinal properties. It has powerful anti-inflammatory and antioxidant effects.

Ginger appears to be highly effective against nausea.

For example, it has a long history of use as a sea sickness remedy, and there is some evidence that it may be as effective as prescription medication.

Ginger may also relieve nausea and vomiting after surgery, and in cancer patients undergoing chemotherapy.

But it may be the most effective when it comes to pregnancy-related nausea, such as morning sickness.

According to a review of 12 studies that included a total of 1,278 pregnant women, 1.1-1.5 grams of ginger can significantly reduce symptoms of nausea.

However, ginger had no effect on vomiting episodes in this study.

Although ginger is considered safe, talk to your doctor before taking large amounts if you are pregnant. Some believe that large amounts can raise the risk of miscarriage, but there are currently no studies to support this.

Ginger has been shown to be effective against exercise-induced muscle pain.

In one study, consuming 2 grams of ginger per day, for 11 days, significantly reduced muscle pain in people performing elbow exercises.

Ginger does not have an immediate impact, but may be effective at reducing the day-to-day progression of muscle pain.

These effects are believed to be mediated by the anti-inflammatory properties.

Osteoarthritis is a common health problem. It involves degeneration of the joints in the body, leading to symptoms like joint pain and stiffness.

In a controlled trial of 247 people with osteoarthritis of the knee, those who took ginger extract had less pain and required less pain medication.

Another study found that a combination of ginger, mastic, cinnamon and sesame oil, can reduce pain and stiffness in osteoarthritis patients when applied topically. This area of research is relatively new, but ginger may have powerful anti-diabetic properties.

In a recent 2015 study of 41 participants with type 2 diabetes, 2 grams of ginger powder per day lowered fasting blood sugar by 12%.

It also dramatically improved HbA1c (a marker for long-term blood sugar levels), leading to a 10% reduction over a period of 12 weeks.

There was also a 28% reduction in the ApoB/ApoA-I ratio, and a 23% reduction in markers for oxidized lipoproteins. These are both major risk factors for heart disease. However, keep in mind that this was just one small study. The results are incredibly impressive, but they need to be confirmed in larger studies before any recommendations can be made.

Chronic indigestion (dyspepsia) is characterized by recurrent pain and discomfort in the upper part of the stomach.

It is believed that delayed emptying of the stomach is a major driver of indigestion.

Interestingly, ginger has been shown to speed up emptying of the stomach in people with this condition.

After eating soup, ginger reduced the time it took for the stomach to empty from 16 to 12 minutes.

In a study of 24 healthy individuals, 1.2 grams of ginger powder before a meal accelerated emptying of the stomach by 50%.

Menstrual pain (dysmenorrhea) refers to pain felt during a woman's menstrual cycle.

One of the traditional uses of ginger is for pain relief, including menstrual pain.

In one study, 150 women were instructed to take 1 gram of ginger powder per day, for the first 3 days of the menstrual period.

Ginger managed to reduce pain as effectively as the drugs mefenamic acid and ibuprofen.

High levels of LDL lipoproteins (the bad cholesterol) are linked to an increased risk of heart disease.

The foods you eat can have a strong influence on LDL levels. In a 45-day study of 85 individuals with high cholesterol, 3 grams of ginger powder caused significant reductions in most cholesterol markers.

This is supported by a study in hypothyroid rats, where ginger extract lowered LDL cholesterol to a similar extent as the cholesterol-lowering drug atorvastatin.

Both studies also showed reductions in total cholesterol and blood triglycerides.

Cancer is a very serious disease that is characterized by uncontrolled growth of abnormal cells.

Ginger extract has been studied as an alternative treatment for several forms of cancer.

The anti-cancer properties are attributed to 6-gingerol, a substance that is found in large amounts in raw ginger.

In a study of 30 individuals, 2 grams of ginger extract per day significantly reduced pro-inflammatory signalling molecules in the colon.

However, a follow-up study in individuals at a high risk of colon cancer did not confirm these findings.

There is some, albeit limited, evidence that ginger may be effective against pancreatic cancer, breast cancer and ovarian cancer. More research is needed.

Oxidative stress and chronic inflammation can accelerate the aging process.

They are believed to be among the key drivers of Alzheimer's disease and age-related cognitive decline.

Some studies in animals suggest that the antioxidants and bioactive compounds in ginger can inhibit inflammatory responses that occur in the brain.

There is also some evidence that ginger can enhance brain function directly. In a study of 60 middle-aged women, ginger extract was shown to improve reaction time and working memory.

There are also numerous studies in animals showing that ginger can protect against age-related decline in brain function.

Gingerol, the bioactive substance in fresh ginger, can help lower the risk of infections.

In fact, ginger extract can inhibit the growth of many different types of bacteria.

It is very effective against the oral bacteria linked to inflammatory diseases in the gums, such as gingivitis and periodontitis. Fresh ginger may also be effective against the RSV virus, a common cause of respiratory infections. Ginger is one of the very few superfoods actually worthy of that term.

Original Article

Role of Cytology in Diagnosis of Ovarian Tumors

Diagnostic Efficacy of Ovarian Fluid Cytology in the Identification of Ovarian Tumors in Adolescents and Young Adults

Aisha Akbar[1], Huma Riaz[2], Nosheen Nabi[1], Nazia Khan[3], Mehreen Mushtaq[3] and Ahmareen Khalid[3]

ABSTRACT

Objective: To determine the role of cytology in the diagnosis of ovarian tumors in adolescent and young adults.
Study Design: Retrospective study.
Place and Duration of Study: This study was conducted at the Department of Pathology, Rawal Medical and Dental College, Islamabad from January 2014 to December 2015.
Materials and Methods: We retrospectively reviewed 80 cases of females presenting with ovarian masses in adolescent and reproductive age group. At least four slides were prepared for each case by fixing them in 95% ethanol. Hematoxylin and Eosin stain was used to stain cytology smears. Ovarian fluid cytology was compared with histopathological diagnosis keeping histopathology as gold standard.
Results: The median age at the time of diagnosis was years (range 11-40 years). Benign tumors occurred in 34 (42.5%) of the patients. Increasing percentage of malignant tumors was seen with the age comprising 42.5%cases above 30 years. There was increased incidence of germ cell tumor in adolescents and young adults comprising 42 (52.5%). Of these cases mature cystic teratoma was the commonest. Epithelial tumors were common in the reproductive age group comprising 46 % of the cases.91% of benign tumors were correctly diagnosed as benign on cytology. Out of 46 (57.5%) malignant cases, 80% were correctly diagnosed as malignant on cytology. Overall sensitivity and Specificity of ovarian fluid cytology was 80.4% and 94% respectively.
Conclusion: Cytology is a simple, rapid and economical diagnostic tool with high accuracy rate and can be utilized to differentiate between histological subtypes and nature of the tumor in adjunct with histopathology for suitable treatment regimens in adolescents and young adults.
Key Words: Cytology, Adolescents, Reproductive age, ovarian tumor

Citation of article: Akbar A, Riaz H, Nabi N, Khan N, Mushtaq M, Khalid A. Diagnostic Efficacy of Ovarian Fluid Cytology in the Identification of Ovarian Tumors in Adolescents and Young Adults. Med Forum 2020;31(6):3-7.

INTRODUCTION

Ovarian tumor comprises 10-20% of all tumors in adolescents and approximately 25-30 % in reproductive age group.[1] There is clear association between the histological subtype of the tumor and prognosis of the patient therefore it is important to determine the type of tumor for its proper treatment.[2] Since surgery is considered as primary treatment for ovarian tumors, it is important to correctly diagnose ovarian tumors for the ovarian salvage and fertility preservation in this age group.[3] Cytology has been underutilized modality for the primary diagnosis of ovarian tumors owing to the overestimated concept about seeding of tumor implants and incorrect diagnosis by inexperienced pathologists.[4] Cytology of an ovarian mass plays an important role in distinguishing between non-neoplastic cyst and malignant tumors particularly in young women.[5,6]

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Received: January, 2020
Accepted: February, 2020
Printed: June, 2020

MATERIALS AND METHODS

80 cases of different types of ovarian masses were reviewed for cytology and histopathology. Age range of the patients was 11-40 years. Out of these 32 clinically benign cases were subjected to ultrasound guided FNAC. In vitro aspiration of surgically resected specimen was done in 48 cases. Four slides were prepared of each case and fixed in 95% ethanol. Slides were stained with Hematoxylin and Eosin stain. The smears were evaluated for cellularity, configuration of cells and type of cells. Background was labeled as clear, necrotic proteinaceous or mucoid depending upon the cytology. Hemorrhagic only aspirates were

excluded from the study. Cytology results were compared with histological diagnosis..

RESULTS

Most cases presented in age range of 30-40 years (42.5%).

The cases were diagnosed as malignant on cytology which included germ cell tumors, surface epithelial tumors and poorly differentiated neoplasm. Germ cell tumor were the most common comprising 42 (52.5%) of the cases. Followed by epithelial tumors comprising 37 (46.25%) cases.

Out of 34 (42.5)% benign cases on histopathology, 31 (91%) were correctly labeled as benign. 03(9%) cases were considered as malignant (false positive) on cytology. Most common benign tumor was Mature cystic teratoma giving diagnostic accuracy of 100% in these cases.

Table No.1: Data analyzed by descriptive statistics

Benign Tumors (n=)	Correct Cytological diagnosis(n=)	False +ve cytological diagnosis	False -ve cytological diagnosis
Mature cystic Teratoma16)	**16 (100%)**	**0**	**0**
Mucinous cystadenoma (10)	**9 (90%)**	**01 (10%)**	**0**
Serous cystadenoma (8)	**06 (75%)**	**02 (25%)**	**0**
Total 34 (42.5%)	**31 (91%)**	**03 (9%)**	**0**

Table No.2: Data analysis.

Malignant Tumors (n=)	Correct Cytological diagnosis (n=)	False +ve cytological diagnosis	False -ve cytological diagnosis
Immature teratoma (2)	**1 (50%)**	**0**	**1 (50%)**
Dysgerminoma (13)	**13 (100%)**	**0**	**0**
Yolk sac tumor (4)	**4 (100%)**	**0**	**0**
Mixed Germ cell tumor (7)	**4 (57%)**	**0**	**3 (43%)**
Serous cystadenocarcinoma (13)	**9 (69%)**	**0**	**4 (31%)**
Mucinous cystadenocarcinoma (3)	**2 (67%)**	**0**	**1 (33%)**
Endometrioid adenocarcinoma (3)	**3 (100%)**	**0**	**0**
Undifferentiated (1)	**1 (100%)**	**0**	**0**
Total 46 (57.5%)	**37 (80%)**	**0**	**9(20%)**

Most common malignant tumors comprised of Dysgerminoma and Serous cystadeno carcinoma comprising 28% of all malignant tumors each.

Out of 46 (57.5)%malignant cases on histopathology, 37(80%)were correctly labeled as malignant. Out of these 9 (20%) cases were diagnosed as benign (false negative) on cytology.

Data was analyzed using descriptive statistics. True positive cases (TP) were 37 (80%).

False positive (FP) cases were 3(9%). True negative cases were 31 (91%). False negative cases were 9 (20%).

Positive predictive value (PPV) was 92.5%. Negative predictive value (NPV) was 77.5%.

Overall Sensitivity and Specificity was found to be 80.4% and 94% respectively.

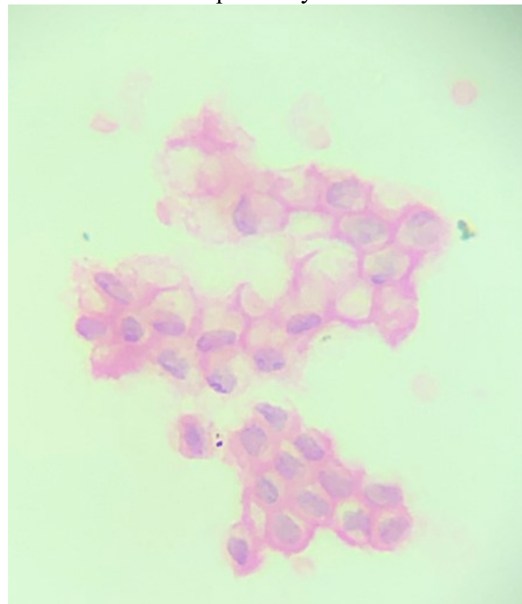

Figure No.1: Mucinous cyst adenoma- Clusters of benign cells with eccentric nucleus and empty-looking cytoplasm containing mucin. (H&E x400)

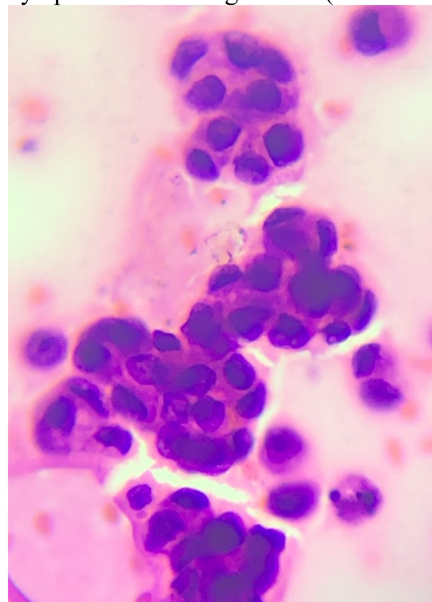

Figure No.2: Serous cyst adenocarcinoma- Cells showing stratification and tufting with scanty cytoplasm. Nuclei are pleomorphic with fine nucleoli. (H&E x400)

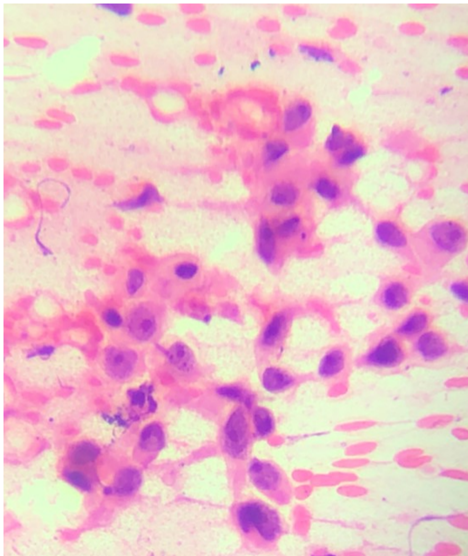

Figure No.4: Dysgerminoma: Cells show well defined cell boundaries, clear to granular cytoplasm, vesicular nuclei and prominent eosinophilic nucleoli. Dispersed lymphocytes seen in the background. (H&E x400)

DISCUSSION

Most cases of malignant tumor were seen in older age group showing increased incidence of these tumors with age.

The main purpose of the cytological evaluation was to exclude malignancy in young patients to fertility. Results of the latest studies are comparable to our results.[7] Cytology has proved to have high accuracy rates in adjunct to histopathology.[8,9] Low sensitivity of cytology was seen in few cases due to inconclusive cases.[7] Few cases were also excluded in our study in which cytology did not result in a diagnosis, making cytology redundant in these cases that may be due to procedural or processing error.[10] Overall diagnostic accuracy of this study was 85% comparable to the accuracy by Khan et al.[9] Sood et al and Bandyopadhyay et al also showed high diagnostic accuracy in case of ovarian fluid cytology.[11,12]

38(90.4%) cases of Germ cell tumors were correctly diagnosed as benign or malignant on cytology. Mature teratoma on cytology showed squamous cells with keratin debris and few inflammatory cells in the background. Findings were similar to the study by Sood et al where predominantly squamous cells and keratin flakes were seen.[11] The case of Immature teratoma was however under diagnosed as similar findings were seen in the cytology but histopathology revealed immature neural tissue.

Few cases of mixed germ cell tumors were also labeled as mature cystic teratoma as the cytology smears revealed keratin and benign squamous cells only but on histopathology foci of other malignant germ cell tumors were also seen. Similar diagnostic difficulty was also observed by Kadivar et al.[13] Literature show that scrape cytology increases the efficacy of diagnosing ovarian lesions in cytology.[7]

All cases of dysgerminoma were accurately identified on cytology. The cells showed well defined outlines with prominent nucleoli and lymphocytes in the background. High diagnostic accuracy was also seen by Afroz et al. The smears were moderately cellular with cells having prominent eosinophilic nucleoli.[9]

Groups of cells showing cytoplasmic vacuolation was seen in the cytology of yolk sac tumors. All cases were confirmed on histopathology.[5]

Cases of Endometrioid carcinoma were also correctly diagnosed on cytology as malignant but as serous cyst adenocarcinoma. Studies show that at times it is difficult to differentiate between the two owing to the presence of columnar cell morphology and ovoid nuclei.[14] However we did not experience the difficulty due to presence of columnar cells with occasional glandular configuration.

8(78.3%) cases of Surface epithelial tumors were correctly diagnosed as benign or malignant on cytology. Smears from cases of serous cystadenoma showed epithelial cells in papillary configuration with bland ovoid nuclei. Zhou et al also reported aggregates of benign epithelial cells with uniform nuclei.[10]

One case of benign serous cystadenoma was over diagnosed as malignant where the smears were hypo cellular and papillary aggregates showed stratification and overlapping nuclei. Histopathology revealed focal stratification of cells. According to literature focal stratification without significant atypia can be seen in benign serous tumors.[15] No stromal invasion was seen in the histopathology slides which is essential to label it malignant.[16]

Although borderline malignancies have overall a better prognosis than malignant ovarian tumors, these tumors were included in the malignant category in the study as they share common morphological features to their malignant counterparts, may show peritoneal implants and can develop into invasive carcinoma.[17]

All cases of mucinous cyst adenoma were correctly diagnosed on cytology. The smears revealed clusters of cells with bland eccentric nuclei and mucin. Good diagnostic accuracy was seen by Herman et al in case of mucinous neoplasms.[18]

9 (69%) cases of serous cystadenocarcinoma were accurately diagnosed on cytology. 4 (31%) cases was labeled as benign on cytology as the cluster of cells did not show significant nuclear atypia. However pleomorphic cells and stroma invasion was seen on histopathology. Similar diagnostic difficulty was experienced by Ouladshaebmadarek et al and preparing more slides and keeping account of clinical information was suggested.[19]

1(33%) case of Mucinous cystadenocarcinoma was diagnosed as Mucinous cystadenoma. The result was

falsely interpreted as the slides showed abundant mucin and inflammatory infiltrate. Similar finding was experienced by Afroz et al.[9]

All cases of endometrial carcinoma were correctly diagnosed on cytology giving diagnostic accuracy of 100% due to the presence of glandular architecture by atypical columnar cells similar to the findings by Pacheco et al.[20]

In our study high diagnostic accuracy was seen in the determining the histological group of the tumor and discrimination of benign from malignant lesions. 100% diagnostic accuracy was seen in determining correct histological group of the tumor which is comparable to 96% accuracy by Ganjei et al.[21] 85% diagnostic accuracy was seen in determining nature of the lesions in the present study.

Afroz et al found sensitivity and specificity of 79.2 and 90.6% which is comparable to the sensitivity and specificity of our study, 80.4% and 94% respectively. Diagnostic accuracy of our study is 85 % which is less as compared to the 96% diagnostic accuracy of Moran et al and comparable to 89.9% accuracy by Afroz et al.[9]

Few limitations experienced during the study was low cellularity and interobserver bias. Taking multiple samples from different foci and collaboration between pathologists can improve the overall diagnostic yield of ovarian fluid cytology.

CONCLUSION

Ovarian fluid cytology is a quick and cheap diagnostic procedure useful in making accurate diagnosis of histological subtypes and nature of the tumor for appropriate treatment regimens in adolescents and young adults.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Complications of Ligasure™ Haemorrhoidectomy: An Experience of 144 Cases

Tariq Rashid[1], Umar Farooq[1] and Mahwish Rabia[2]

ABSTRACT

Objective: The aim of this study is to determine various complications of ligaSure™ haemorrhoidectomy during the learning curve in a tertiary care hospital.

Study Design: Prospective descriptive study.

Place and Duration of Study: This study was conducted at the Department of General Surgery at Social Security Teaching Hospital Islamabad from March 2017 to September 2019.

Materials and Methods: The patients having age more than 12 years with grade III and IV haemorrhoids admitted through OPD were included in this study. The patients with recurrent disease, associated perianal pathology like anal stenosis, fistula in ano etc., deranged bleeding profile and patients with positive viral serology for hepatitis B or C were excluded. All the patients underwent ligaSure™ haemorrhoidectomy. All the complications associated with the LigaSure™ haemorrhoidectomy were noted on a specified proforma. The data was analyzed by using SPSS 15 software.

Results: A Total of 144 patients participated in this study, 68.83% were males and 31.17% were females. Their mean age was being 44±5 years. The mean pain score on visual analog scale was 4.1. The next most common complication was bleeding (6.25%) followed by anal spasm (4.86%), and urinary retention (4.17%). Only two patients had wound infection which was managed conservatively by antibiotics and sitz bath. There was no incontinence and recurrences observed in the subsequent follow up after six months.

Conclusion LigaSure™ hemorrhoidectomy is not only safe and effective but also has less pain and reduced blood loss, and fewer other complications. Technically it is much simpler because it is sutureless and hemostasis can be easily achieved.

Key Words; LigaSure™ haemorrhoidectomy, Complications, Haemorrhoidectomy

Citation of article: Rashid T, Farooq U, Rabia M. Complications of Ligasure™ Haemorrhoidectomy: An Experience of 144 Cases. Med Forum 2020;31(6):8-11.

INTRODUCTION

Haemorrhoids are one of the most common cause of bleeding per rectum. The word "Haemorrhoid" is derived from the Greek word "Haemorrhoides" meaning flow of blood (haem=blood, rhoos=flowing)[1]. Haemorrhoids are classified into four grades according to the degree of their prolapse. Clinically, 3rd degree hemorrhoids are anal cushions which come through the anus on straining and require manual reduction back into the anal canal, while 4rth degree internal hemorrhoids are permanent prolapses that are irreducible[2].

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Received: February, 2020
Accepted: April, 2020
Printed: June, 2020

There is increase in the incidence of haemorrhoides with increase in age and it has been observed that at least 50% of population over the age of 50 years do face some degree of hemorrhoid formation. Men are seen affected roughly twice as compared to women[3]. Haemorrhoidectomy is considered superior to all other conservative procedure, including injection sclerotherapy, rubber band ligation, cryotherapy or photocoagulation for treating symptomatic grades III and IV hemorrhoids[4]. Even with the availability of new techniques, haemorrhoidectomy and haemorrhoidopexy are the treatment of choice for both third and fourth degrees of haemorrhoids[4,5]. However postoperative complications are still a headache for the surgeons. At present, there are two traditional surgical approaches include the closed haemorrhoidectomy i.e. (Ferguson and Parks) and the open haemorrhoidectomy i.e. (Milligan–Morgan) but complications are almost similar in both types particularly in sever pain, blood loss, urinary retention and secondary bleeding that results in longer hospital stays[6]. Other complications include anal stenosis, incontinence, loss of sensation around perianal region and delayed recovery e.t.c. The postoperative pain is associated with the trauma to the sensitive skin and tissue around the anus[7]. Much of this postoperative pain may be because the thermal injury

due to the use of cautry and the knots applied to ligate the haemorrhoids. The search of the most effective and painless approach for the management of hemorrhoids is still a real big concern for general surgeons[8]. Different approaches and instruments has been tried by the surgeons to deal with these complications. Excisional haemorrhoidectomy can be completed with the use of scissors, diathermy, stapler device or a vessel sealing device like LigaSure™. LigaSure, a vessel sealing device has been in practice for more than a decade for haemorrhoidectomy[9].

This is an improved version of bipolar diathermy with further advantage of achieving haemostasis by its vessels sealing system which acts by a combination of pressure and heat produced by radiofrequency, . It can seal blood vessels up to 7 mm in diameter. The delivered energy is confined to tissue clinched between the jaws of the forceps with very limited lateral thermal spread to the surrounding tissues which is not more than 2mm. It is a multifunctional device with the ability of grasping, sealing, blunt dissection, and ultimately dividing tissues[1,10]. Further LigaSure™ electrosurgical unit stops energy delivery as soon as the tissue sealing is complete. The confined thermal dispersion allows the surgeon to perform a relatively bloodless surgery and reduce the anal spasm which is responsible for most of the postoperative pain after heamorrhoidectomy. LigaSure™ haemorrhoidectomy is considered now superior to conventional diathermy haemorrhoidectomy as it is designed specifically to be used in a more confined surgical field due to relatively bloodless surgery, the precise visibility and dissection has become more easier. Further there is no need of suture to tie the haemorrhoids which otherwise produces a wound that needs a significant time to heal in addition to a threat of slipping of ligature[11]. Various studies have shown it an effective and safe tool for haemorrhoidectomy because it offers bloodless haemorrhoidal excision and reduced tissue trauma, postoperative pain, infection rate, time for wound healing and time to return to normal activities[9,10,11]. We also have conducted this study to see the complications of ligaSure™ haemorrhoidectomy in our setup.

MATERIALS AND METHODS

This prospective study was conducted in General Surgery department at Punjab Employees Social Security Teaching Hospital Islamabad from March 2017 to September 2019. The study was approved by the ethical committee of the hospital. The patients with the age more than 12 years with grade III and IV haemorrhoids admitted through OPD were included in this study. Patients having recurrent disease, associated perianal pathology like anal stenosis, fistula in ano e.t.c, deranged bleeding profile and patients having positive viral serology for hepatitis B or C were excluded. All the patients had preoperative workup in surgical OPD. All the patients had been tested for CBC, LFTs, Bleeding Profile, RFTs, Hepatitis B, C and HIV. The procedure was explained to all the patients in order to get the informed consent. All the patients received either general anaesthesia or spinal anaesthesia and operated in lithotomy position. After manual dilatation of the anal sphincter, the external and internal parts of the haemorrhoids were dissected and lifted from the sphincter up to the base of the haemorrhoids. The pedicle then sealed with the ligaSure™ and the excess tissue removed. The haemostasis achieved either with ligasure or monopolar diathermy if required. Mucosal fusion was also achieved with the use of ligasure therefore no stich was applied. achieved mucosal fusion. Where required a stich with vicryl was only applied for achieving haemostasis. All the patients were given antibiotics, analgesics, laxatives, local anaesthetic gel and encouraged to have sitz bath postoperatively. All the complications associated with the LigaSure™ haemorrhoidectomy were noted on a specified proforma. The severity of the pain postoperatively was recorded on visual analog scale from 0 – 10 cm from immediately postoperative period to one week on daily basis and mean score was calculated for every patients. Zero was labelled as No pain, 1 to 3 mild pain, 4 to 6 moderate pain and 7 to 10 as severe pain. Mostly patients were discharged within three days after surgery except those developed any complication. For further follow up, the patients were called in surgical OPD at the end of first week, 3rd week, 6th weeks and six months intervals to see any complication related to ligasure haemorrhoidectomy. The data was analyzed by using SPSS 15 software.

RESULTS

A total of one hundred and forty four patients were studied. The mean age the patients was 44±5 years. The majority (35.41%) was lying in the fifth decade of life. The male patients (68.83%) were more as compared to female patients (31.17%). The mean operative time for ligaSure™ haemorrhoidectomy was 20.3 minutes. Mean postoperative hospital stay was 3.1 days. All the patients have pain with varying degree managed with analgesics. The assessment of pain during postoperative hospital stay was done on mean visual analogue scale ranging from 0 – 10cm which was 4.1. The next most common complication was peroperative bleeding which was 6.25% and required haemostatic ligature. Seven patients (4.86%) had anal spasm postoperatively and all were managed conservatively with sitz bath, analgesics and 2% glyceryletrinitrate ointment. Six (4.17%) patients had urinary retention on the first postoperative day which was managed by temporary foley's catheterization. Only two patients had wound infection which was managed conservatively by antibiotics and sitz bath. There was no incontinence and recurrences

observed in the subsequent follow up after six months.

Table No.1: Sex distribution, N= 144

S.No	Sex	No. of patients	% age
1	Male	106	68.83
2	Female	48	31.17
	Total	144	100

Table No.2: Age Distribution n=144

Age Distribution In years	No. of Patients	% age
< 30	6	3.9
31 – 40	42	27.28
41 – 50	51	35.41
51 - 60	39	27.08
>60	16	10.39
Total	144	100

Table No.3: Complications

S. No.	Complication	No. of patients	% age
1	Bleeding	9	6.25%
2	Anal spasm/stenosis	7	4.86%
3	Urinary retention	6	4.17%
4	Infection	2	1.39%
5	Incontinence	0	0%
6	Recurrence	0	0%

DISCUSSION

Haemorrhoids are one of the most common cause of bleeding per rectum in our patients presented in the out patients department. Most of the patients with complaint of bleeding per rectum presents very late in surgical department in our society and diagnosed as having grade III or IV haemorrhoids because they remain reluctant to present themselves to the doctor in the initial stage due to social hesitation or getting treatment from "hakims". Many treatment options are in practice like conservative medical treatment, injection sclerotherapy, band ligation, cryotherapy and surgical haemorrhoidectomy[12]. Surgical haemorrhoidectmy is still the gold standard treatment for symptomatic haemorrhoids. But the complications especially bleeding and postoperative pain associated with Milligan and Morgan (open haemorrhoidectomy) and Ferguson (closed haemorrhoidectomy) are still a headache for the colorectal surgeon and they always search newer techniques which are safe and better for the patients[13]. In this context, different techniques of surgery has been refined and equipment have been developed to deal with the bleeding and postoperative pain which includes the use of cautery for dissection, the use of lactulose and metronidazole during perioperative phase, lateral internal sphincterotomy or even some surgeogs also use intraoperative injection of botulinum neurotoxin[14]. Stapled haemorrhoidectomy was introduced in the recent past but has not secure its popularity because of the high cost of the stapler and the demand of the expertise in the use of the device. Now a days vessel sealing equipment, a type of bipolar diathermy, known as LigaSure™ is available in most of hospitals for General Surgery. It allows complete sealing of the blood vessel up to 7mm safely therefore bleeding has significantly reduced. There is also minimal lateral thermal spread not more than 2mm. Its use in the haemorrhoidectomy is becoming popular now a days as it is easy to use and its application gives a distinct line of coagulation due to which bloodless haemorrhoidal excision is possible, making it an excellent instrument for haemorrhoidectomy[15,16].

Several clinical trials have been conducted to reveal its true usefulness, in regard to establish the complications and recurrence rate. However, with the information till to date we have, this procedure is considered safe with less bleeding and postoperative pain[6,7,17].

One hundred and forty four patients were studied. Mean age of patients was 44 ± 5 years. Majority was males as compared to females. Mean hospital stay was 3.1 days. These findings were similar with most of the studies[17,18]. The mean operative time was 20.3 min which was little higher as compared to most national and international studies. The most likely cause for higher operative time might be the learning curve of the surgeons to use the ligaSure™ device.

The most common complication was postoperative pain. In one of the recent studies, Khadem TJ, found postoperative pain in 26.4% patients although he did not describe the severity of the pain. However in other studies, researchers have described the severity of postoperative pain on visual analog scale. Bahena JA showed mean VAS 4.8 in his study.[3] In our study, mean VAS was 4.1 which is similar with most of the studies[18,19].

Haemorrhoidectomy is also associated with bleeding which bothers the surgeons. Traditional scissor dissection is associated with significant peroperative bleeding. The use of diathermy dissection has reduced the bleeding significantly but there is still a need of ligature which sometimes slips causing postoperative bleeding. However stapled haemorrhoidectomy has overcome these problems but its high cost has reduced its advantage[6]. On the other hand the ligaSure™ not only sealed the vessel but also restore mucosa[20]. Therefore it results not only reduced bleeding but also there is no need of suture. We require suturing in 6.25% patients to secure the bleeding even after the use of ligaSure™. In these cases either vessel size was more than 7mm or they were having cluster of vessels.

Anal spasm was found in 4.86% patients in early postoperative period which was managed conservatively with sitz bath lignocaine gel, stool softner and analgesics. Urinary retention was found 4.17% patients which was managed with temporary foley's catheterization. Only 1.39% patients had wound infection which was managed conservatively. However incontinence and recurrence were not found in any

patient followed up to six months after surgery. These findings are similar with most national and international studies[17,20]

CONCLUSION

LigaSure™ hemorrhoidectomy is safe and easy to use and it is a closed hemorrhoidectomy technique which does not require suture but it depends on a modified bipolar diathermy unit to achieve the sealing of tissue and vessels. It is not only safe and effective but also has reduced blood loss, less postoperative pain and minimum complications. Technically it is simple and easy as there is no need of stitch to control bleeding.

Author's Contribution:

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Revisiting Critically:	Tariq Rashid, Umar Farooq
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Ultrasonic Fetal Weight & Acute Birth Wt.

Correlation Between Ultrasonic Estimated Fetal Weight and Acute Birth Weight of Neonate in Pakistan

Zafar Tanveer Ahmed[1], Saima Ameer[2], Nighat Haroon Khan[2], Saira Bilal[2], Madeeha Tanveer Khan[2] and Fareeha Tanveer[2]

ABSTRACT

Objective: To study the A mutual relationship Ultrasonic value fetal weight and acute birth weight of neonate in Pakistan.

Study Design: Observational study

Place and Duration of Study: This study was conducted at the Radiology Department of Lahore General Hospital, Lahore and Idris Teaching Hospital Sialkot from Jan 2019 to July 2019.

Materials and Methods: The patients of 37th week of gestation and over were added in the study to compare the acute the weight of a baby and Ultrasonography estimated weight of the fetus. Total 282 pregnant ladies with no complication history were sorted for the study as a sample. The history medical examination and ultrasonic examination were considered in every patient. The informed consent was also taken from every pregnant woman. The permission of the ethical committee was also considered.

Results: The advancement in technology has helped to improve public health in reducing the risk of mortality in women and in neonates. The study reveals that there is no significant difference between the value of the weight of a baby calculated in Ultrasonography and the real weight delivered at birth time.

Conclusion: It can be concluded from the results that the ultrasound is a safe and good predictor of birth weight and its readings and results can help in important decision by the gynecologist for safer delivery.

Key Words: Correlation, Ultrasonic, value of baby weight, real baby weight, neonate

Citation of article: Ahmed ZT, Ameer S, Khan NH, Bilal S, Khan MT, Tanveer F. Correlation Between Ultrasonic Estimated Fetal Weight and Acute Birth Weight of Neonate in Pakistan. Med Forum 2020;31(6):12-16.

INTRODUCTION

The evaluation of fetal development is a basic part of pre-birth care, empowering recognizable proof of babies in danger of death of a fetus.[1] identification of both baby development limitation and enormous for pregnancy age embryos is basic to design suitable welfare.[2] FGR, alluding to hatchlings with a weight of a baby plotting underneath the tenth percentile, is the single most grounded chance fetal death.[3] LGA embryos, those with a weight of a baby more prominent than the ninety percent,[2] are in danger of the shoulders are stuck and subsequently expanded crisis cesarean segment values.[2]

Following the presentation of reexamined FGR the board principle1 to lessen fetal death value,[4] medical imaging assessment of baby development has become all the more generally carry out.[1] Betweens different evaluations, a medical imaging development check joins the exhibition of 3 baby statistical analysis estimations — head boundary (HC), stomach outline (AC) and The distance from the head of the femur to its distal end[5] clearly defined norms and tourist spots needed for every estimation are specified by the National Health Service Fetal Anomaly Screening Programme,[6] to guarantee exactness and reproduction and decrease both between and intra-administrator inconstancy. The parietal bones distance across (BP D) estimation of the baby head was recently acted in inclination to the HC, however this training is currently viewed as obsolete in the UK, as per the British Medical Ultrasound Society (BMUS).[5]

While verifiably the 3baby statistical analysis estimations (HC, AC, FL) taken during the sweep were drawn on singular populace a drawing that shows information in a simple way,[5,7—9] the estimations are currently joined to compute an expected baby weight (EFW),[1] drawn on a redid development diagram (CGC).[10] The CGC was first brought into training longer than 10 years prior, however has gotten generally used during the last five years.[10] CGCs are customized to consolidate mother sacred qualities, containing weight list Basal Metabolic index and state of belonging to social group, to anticipate the ideal

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Received: January, 2020
Accepted: March, 2020
Printed: June, 2020

baby development bend for an each pregnancy.[10] as a result, any divergence in development is probably going to speak to the science of the causes and effects of diseases, as opposed to physiological difference.[10]

Generous study has explored the most exact equation for ascertaining.[11-13] between late years, formulas adjusted to explicit populaces, for instance two pregnancies or large body hatchlings, and those fusing have length, breadth, and depth (3D) medical imaging have been assessed, however they are until to turn out to be medically established.[13] As such, in ebb and flow United Kingdom medical practice, the RCOG 1 and BMUS advocate the utilization of the *locking* the doors 14; a relapse techni 9ue consolidating every one of the 3 boundary.[5] Although most proof backings formulae fusing each of the three parameters,[15-17] the alternating current estimation much delicate each marker of unusual baby growth.[18,19]

In two thousand five, an orderly survey evaluating the precision of medical imaging EFW found the *locking* the doors 14 created the littlest deliberate mean mistakes on a typical baby population.[11] When this proof was fortified in future,[12] enormous arbitrary blunder continues to exist.[16,20] Most altogether, estimation of EFW utilizing medical imaging is for the most part overestimated, particularly in the number of inhabitants in little fetuses,[12,20] raising concerns in regards to rate of obstetric intervention.[21,22] When thinking about the administration of conveyance, EFW ought to be exact to inside five percent, however ten percent is satisfactory,[11,23] therefore limiting irregular blunder level needed.[11,15]

The point of this audit was to survey the current exactness of medical imaging computation of EFW, distinguishing much predictable education while building up the key factors at present influencing precision.

MATERIALS AND METHODS

An observational study was conducted at the Radiology Department of Lahore General Hospital, Lahore and Idris Teaching Hospital Sialkot from Jan 2019 to July 2019. The patients of 37th week of gestation and over were added in the study to compare the acute baby weight and Ultrasonography estimated weight of the fetus. Total 282 pregnant ladies with no complication history were sorted for the study as a sample. The history, medical examination and ultrasonic examination were considered in every patient.

RESULTS

The selected sample size was 282 pregnant ladies which include both the primipara and multipara. The distribution of both groups is shown in the table 1 below. It is clear that primipara includes 42.5% of the selected sample and multipara includes 57 percent of the sample.

Table No.1: Primipara statistics for actual and estimated birth weight

Weight	Sample N	Percentage
Primipara	120	0.425(42%)
Multipara	162	0.574(57%)
Total	282	100 (100%)

Following table 2 describe the pattern of ultrasonic birth weight and neonatal birth weight of both primipara and multipara. Baby weight less than 2.5 kg is considered low birth weight which may be because of many internal and external factors. From the table 2 it is clear that the majority of the neonate lies in the range of normal baby weight that is from 2.5 kg to 3.5 kg which cumulatively includes 71 % in multipara and 85 %in the primipara group. It is obvious that the new born weight increases as the weight on estimated sonographic reports increases.

Table No.2: Pattern of ultrasonic birth weight and neonatal birth weight of both primipara and multipara

Sr#	Weight	Multipara		Primipara	
		Estimated baby weight	New born weight	Estimated baby weight	New born weight
1	2.0-2.5 kg	25(15%)	24(14.8%)	20(17%)	18((15%)
2	2.5-3.0 kg	51(31%)	50(30.8%)	40(33%)	39((32.5%)
3	3.0-3.5 kg	65((40%)	64(39.5%)	45(37%)	45(37%)
4	3.5 kg -4 kg	20(12%)	0	15((12.5)	14(11.7%)
5	Above 4 Kg	1(0.6%)	0	0	

Table No.3: Correlation of real birth weight with estimated birth weight

Weight	Real birth weight	Estimated birth weight	Correlation coefficient	P-Value
Low baby weight Less than 2500 g	2288g+38g	2284g+36g	0.965	0.486
Normal weight 2500g-4000 g	3545g+46g	3535g+37g	0.947	0.465
M acrosomia Above 4000 g	4314g+44g	4344g+5 1g	0.874	0.2173

Table 3 is about the estimated weight of the fetus in comparison to real birth weight of the neonate in the grams. The table also shows the positive correlation of coefficient with the estimated birth weight and real birth weight. P value was also less than 0.05 which shows no significant difference in the both real and calculated weight of the baby.

It means there is no visible difference in the value weight and the real baby weight in the case of primipara deliveries. Accurate measurement of fetal weight helps the obstetrician for the vital delivery decision.

DISCUSSION

Ultrasound computation of baby weight is regularly favorable an estimate in contrast with real weight.[16,18] When the technique is dependable, trust in the precision of the figuring left blocked by arbitrary mistake; exactness is essentially identified with the equation used and no of consolidated as well as dynamic ones.[15,17]

The locking the doors[14] created the most reliable way methodical blunder & least irregular mistake over each of the seven examinations. At the point when the outcomes were pooled, the recipe created a MPE inside the five percent value of precision looked for in medical use,[11,23] showing an better than something in exactness when the past formal assessment.[11] The adjustment of the investigations was, nonetheless, identified with the precision of the outcomes just, with no thought of test size or populace findings,[25] restricting the noteworthiness of the outcomes. The reliable exact outcomes for such evaluation were gotten by Rashid, however this investigation had the littlest example size (n = seventy three) and information were gathered from the Bangladesh populace just, lessening the force and conclusions.[11,18] Nevertheless, it must be viewed as that babies from such populace are unavoidably less,[1] in this way featuring the viability of the locking the doors[14] while computing the EFW of little embryos, a worry brought up in past study.[12,20]

The United Kingdom concentrate by Anderson et al, created the most elevated value of mistake for the locking the doors.[14] Even though the examination was distributed in two thousand seven, the information are old; gathered from checks acted in two thousand. In the most recent ten years, there have been huge improvements in both medical imaging hardware and use,[5] and along these lines, such outcomes few possessions portrayal of recent precision.

The exactness of medical imaging count of EFW was most elevated in the way that consolidated each of the 3 baby as well as dynamic ones; supporting past written works.[16]

Learn more A formula,[14] two different techniques were surveyed that joined every one of the three estimations — Ott et al. Furthermore, Combs et al; both created valid outcomes (Equivalent discoveries were procured in a past review[19] for the Combs et al. recipe, be that as it may, such technique is volumetric instead of the ordinarily utilized relapse condition, and has not been broadly surveyed, along these lines the dependability of the strategy remains indeterminate.[11,19] The Ott et al. recipe was just surveyed in one examination inside this literature, and however the outcomes were showing signs of future success, past distributed writing represents huge inconsistency.[20]

Strategies fusing the biometric parameters just, carry out ineffectively, with enormous arbitrary mistakes[15], The Hadlock et al equation was the most correct,[20] however irregular blunder values left considerably upper than those delivered by the Learn more A formula,[14] reverberating past values.[11,20] estimated fetal weight dependent on the biometric parameters just, is especially uncommon in delivering health care, as a solid FL estimation can ordinarily be acquired all through the time period extending from the 28th week of gestation until delivery.

Standard only the Fetal size and age estimations were amazingly conflicting, to some degree worried as this technique is all the more every now and again utilized near the end incubation, when an exact estimation of the baby head is regularly limited by its profound situation inside the pelvis of mother. Greatest altogether, over the seven added investigations, arbitrary mistake values of all findings consolidating two measurable factors were perseveringly upper than the Learn more A formula.[14]

Such creators propose a scope of formulae ought to be used in delivering health care by doctors, and a particular technique ought to be picked subordinate upon the fetal populace being assessed.[24]

The rest of the well springs of mistake distinguished were administrator centered; absence of experience, lacking preparing and review lacking sufficient enhancement of the medical imaging.[3] Such discoveries are obvious in the present ultrasound atmosphere; in the United Kingdom, lacking sufficient enrollment and maintenance of ultrasounds experts has brought about expanded work of organization staff, with brief period assigned to maintain review and skill. Both the United Kingdom Association of Sonographers and the Royal College of x-ray specialist, look at review as a condition that, either temporarily or permanently,

impedes mission accomplishment in supporting and holding aptitudes and advancement, to empower skilled delivering health care and arrangement of a special medical imaging administration.

Neither investigations showed that picture standard impacted the precision of medical imaging, a important finding obvious in the past survey performed by Dudley.[11] During the most recent ten years there have been considerable innovative progressions in medical imaging hardware, & the presentation of both symphonious and complex imaging has demonstrated profoundly compelling on picture difference and goals, empowering progressively exact arrangement of an instrument for measuring external or internal dimensions when measurement of the anatomic segments of the fetus by ultrasound estimations. Notwithstanding this, the rising degrees of heftiness inside the mother populace to accept, as expanding body mass index inconveniently influences medical imaging picture slandered; careful and target translation of medical imaging discoveries is fundamental, guaranteeing fitting restrictions are recognized.[25]

CONCLUSION

It can be concluded tram the results that the ultrasound is a safe and good predictor of birth weight and its readings and results can help in important decision by the gynecologist for safer delivery.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Treatment of Recurrent Temporomandibular Joint

Autologous Blood Injection for the Treatment of Recurrent Temporomandibular Joint Dislocation

Muhammad Aamir[1], Farhad Ali[3], Muslim Khan[4], Ishtiaq Ali Khan[2] and Umar Khan[5]

ABSTRACT

Objective: To assess the autologous blood injection in the treatment of recurrent temporomandibular joint dislocation

Study Design: Randomized control clinical trial

Place and Duration of Study: This study was conducted at the Oral and Maxillofacial Department Gajju Khan Medical College, Bacha Khan Medical Complex, Swabi from March 2019 to March 2020.

Materials and Methods: Fifteen patients with bilateral recurrent dislocation were selected. Bilateral arthrocentesis was performed which was then followed by 2ml of autologous blood injection into the joint space tand 1ml injection into the pericapsular area. Postoperative evaluation was gone by history and physical examination for rate of recurrence, maximal mouth opening, frequency of laxation and complications.

Results: Seven patients were male and 8 patients were female. Twelve (80%) patients had successful outcome with no dislocation and no further treatment was required while in 3(20%) patients there was recurrent dislocation.

Conclusion: Autologous blood injection for the treatment of recurrent temporomandibular joint dislocation is simple, safe and effective procedure. With good patient's compliance we recommend the use of autologous blood injection in the treatment of recurrent dislocation especially before going for more invasive procedures for correction.

Key Words: Arthrocentesis, Autologous blood, Temporomandibular joint dislocation, Mouth opening

Citation of article: Aamir M, Ali F, Khan M, Khan IA, Khan U. Autologous Blood Injection for the Treatment of Recurrent Temporomandibular Joint Dislocation. Med Forum 2020;31(6):17-20.

INTRODUCTION

By definition the temporomandibular joint dislocation occurs when the mandibular condyle travels anteriorly with respect to glenoid fossa that is anterior to the articular enimamnce. Temporomandibular joint dislocation is very distressful situation as there is pain with associated loss of the mandibular functions. Many times its happens due to excess everyday activates such as loud laughing, yawning, wide opening of mouth while eating, vomiting, emotional distress and the situation or procedures which require continuous mouth opening such dental procedure.[1]

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Received: April, 2020
Accepted: May, 2020
Printed: June, 2020

The exact pathogenesis is unknown while combinations of multiple factors have been attributed to the chronic temporomandibular joint dislocation. These factors include hyperactivity of the masticatory muscles, trauma, laxity of the temporomandibular ligaments, loosing of the joint capsule, abnormal shallow of glenoid fossa eminence, long standing arthritis, psychotic disorders and abnormal chewing habits.[2]

In clinical examination these patients have incompetent lip seal, unable to close the mouth, called as "open lock", difficulty or unable to speak with drooling saliva and associated with pain in preauricular region. Patients are usually anxious and on palpation there will be hollowness in the pre auricular region. In acute cases pain is more prominent than chronic cases.[3]

Conservative non surgical as well surgical treatment has been employed for the treatment of temporomandibular joint dislocation. Non surgical treatment includes, muscle relaxants with restriction of mandibular movements, soft diet, botulinum toxins application, local anesthesia injection, injection of the sclerosing agents etc. When the conservative treatment fails to achieve the treatment goal, the surgical treatment is employed which includes capsule plication, lateral pterygoid myotomies, enimectomies, temporalis muscle's tendon relief with condylotomies.[4]

Autologous blood injection has been described in the literature with good clinical outcome. Aim is to induce

the fibrosis by organization of the clotted blood in the joint and along with pericapsular area which may lead to the restrict mobility of mandible and reduce chances of dislocation. Combination of the organized clot and fibrosis leads to joint stiffness.[5]

This technique is non invasive, simple can be employed at outdoor basis under local anesthesia with less discomfort to the patient.[2] Due to limited available for its efficacy therefore it is intended to documents our experience regarding efficacy of autologous blood injection is the temporomandibular joint dislocation.

MATERIALS AND METHODS

In this randomized control clinical trial total of 15 patients were taken on outdoor basis from Department of Oral and Maxillofacial Surgery, Gajju Khan Medical College Swabi from 15th march 2019 to 15th march 2020. Patients with recurrent joint dislocation, both male and female, age between 8 years and 75 years, failure of previous conservative treatment were included in the study. Those patients having age more than 75 with systemic disease which contraindicate intervention, coagulopathies, previous joint trauma, previous surgical intervention, and joint infection were excluded. Confirmation of the dislocation was done by clinical examination with radiograghpic assessment by lateral mandibular view and orthopentomogram. After history taking, informed consent was taken and inter incisal distance was measure from the tips of upper and lower incisors. Pre auricular area was prepared by povidone iodine antiseptic solution. Auriculotemporal nerve block was done by lidocain 1:100000. A line is drawn from lateral canthus to mid of tragus (Holmlund-hellsing Line) on either side. Point A was marked 10mm anterior and 2mm inferior to this line. Point B was marked 20mm anterior and 2mm inferior to this line. Both at point A and Point B, 18 gauge needle were inserted up to 1 inch deep in to the joint. Joint lavage was done with normal line. Six milliliter of the blood was drawn from peripheral antecuboidal vein and point B needle was drawn out. Blood of 2ml was injected into the joint space at point A and then needle was drawn 1cm and more 1ml blood was injected around the joint space. Same procedure was repeated on the other side as well. Patient was counseled for soft diet and limitation of joint movements and anti inflammatory with antibiotics were prescribed. Patients were followed for 1 week, 1month and 6 months for mouth opening and clinical outcome of recurrence.

RESULTS

The mean age of the study was 53.13±17.43 years. The mean Duration of disease and follow up was 21.07±12.7 months and 19.60±4.54 months respectively (Table 1). The females (n=8, 53.3%) were more than males (n=7, 46.7%). Most of patients have no history of previous treatment for dislocation of TMJ (n=9, 60%). Most common previous treatment modality was bandage to restrict mouth opening (n=3, 20%). In 3 cases (20%) there was mild pain after autologous blood injection. Post treatment recurrence was found in 3 cases (20%) (Table 2).

Table No.1: Mean and standard deviation of age, disease duration, follow up period, mouth and frequency of dislocation per week in patients undergoing autologous blood injection.

Variable	Mean±SD	Range
Age (years)	53.13±17.43	8-75
Duration of disease in months	21.07±12.7	6-48
Period of follow up in months	19.60±4.54	12-26
mouth opening before (mm)	40.53±3.88	36-49
mouth opening after (mm)	38.53±3.8	34-47
Frequency of dislocation per week	5.2±2.88	3-15

Table No.2: Frequency of gender, history of previous treatment, complications and Post treatment recurrence

Variable	No.	%
Gender		
Male	7	46.7
Female	8	53.3
History of previous treatment		
Nil	9	60.0
Bandage to restrict mouth opening	3	20.0
IMF, medications	1	6.7
medications, bandage to restrict mouth opening	1	6.7
injections & medications	1	6.7
Complications		
Mild Pain	3	20.0
No	12	80.0
Post treatment recurrence		
Yes	3	20
No	12	80

Table No.3: Post treatment recurrence stratified by gender

Gender	Post treatment recurrence				P value
	Yes		No		
	No.	%	No.	%	
Male	1	14.3	6	85.7	0.605
Female	2	25.0	6	75.0	

The frequency of Post treatment recurrence stratified by gender showed that the difference was not statistically significant (P=0.605). (Table 3) Similarly, the frequency of Post treatment recurrence stratified by age groups showed that the difference was not statistically significant (P=0.212). (Table 4)

Table No.4: Post treatment recurrence stratified by age group

Age (years)	Post treatment recurrence				P value
	Yes		No		
	No.	%	No.	%	
Below 39	-	-	2	100	0.212
40-50	-	-	3	100	
51-60	1	20.0	4	80	
61-70	2	66.7	1	33.3	
70 & above	-	-	2	100	

DISCUSSION

Recurrent temporomandibular dislocation is a chronic debilitating condition in which many times patient's need assistance for mandibular reduction. Various non surgical treatments have been employed before undergoing the surgery correction. For the sclerosis of the joint literature suggests tincture iodine, sodium psylliate alcohol etc but major possibility of the side effects and complications these sclerosing agents are not utilized usually.[6]

Schaulz in 1973 used the autologous blood injection for the treatment of recurrent temporomandibular joint dislocation. In this study they used to inject twice a week followed by mandibulomaxillary fixation for 4 weeks. In this study patients were followed upto 1 year and were asymptomic.[7] More recently Bayoumi el[8] injected autologous blood in 15 patients. One year follow-up was done and there was more than 80% recovery with the improvement in 12 patients. Treatment results were physically evaluated with average 34mm mouth opening.[8] All these finding are in coherence with our study where we treated 15 patients with no recurrence was observed in 12 patients with significant improvement in the symptoms.

The study conducted by yoshida et al[9] treated 21 patients with autologous blood injection. Mean rage for duration of symptomic cases were 31moths. Only 3 patients in this study had recurrent dislocation after 36 months of followup.[9] Coherence to our study more than 80% where successfully treated with autologous blood.

Jacobi hermanns et al[10] 1981 treated 19 patients with the autologous blood injection in the temporomandibular joint dislocation. In this study patients were followed for 18 months and 17 patients were asymptomatic with significant improvement.

Daif[11] compared by superior joint injection with superior joint space combined with pericapsular injection. In this study the success rate was more in the superior joint space combined with pericapsular injection.[4] Our study has similar fining and in coherence with the previous studies.[4, 11]. In the study conducted by Coser and his colleagues[12] 11 patients were selected for autologous blood injection. There was reduction in interincisal mouth opening. This study suggests that the formation of the fibrosis at temporomandibular joint. It was suggested that initial decrease in mouth opening may be due to fear and anxiety of the patients post treatment. We also observed mean decrease in maximal mouth opening. Basic aim of the injection is the restriction of mandibular movements by formation of fibrosis through organization of blood clot. Though success of the procedure cannot be evaluated cases radiographically or experimentally mostly but can be proved most of the times thorough patient history clinical observation. Study also suggests that blood come in contact with articular cartilage changes the metabolism of the chondrocytes and thus causes destruction of the cartilage.[13] In other study conducted, selected 10 patients for the management of recurrent TMJ dislocation. Bilateral Arthrocentesis was performed and was followed by 2ml of autologous blood injection in to the superior joint space and 1ml of into pericapsular tissues. Patients were followed by history, clinical examination and MRI finding. There was 80% success in this study. Arthrocentesis having additional advantage of relieving the adhesion with washing out inflammatory substances with relief intra joint pressure. It relieve the pain and the clicking of the joint with relatively good outcome with the autologous blood injection.[14]

In accordance with the above mentioned studies, Study we conducted included 15 patients in which 12 out of 15 patients showed successful results. First arthrocentesis was done which was followed by autologous blood injection. The results were evaluated by history and physical examination of the patient as mentioned in the studies. Post interventional complication was only pain which was observed in 3 patients.

CONCLUSION

Autologous blood injection in for the treatment of recurrent temporomandibular dislocation is simple, safe and effective procedure. With good patient's compliance we recommend the use of autologous blood injection in the treatment of recurrent temporomandibular dislocation especially before going for more invasive procedures for the correction of temporomandibular joint dislocation.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article Hypovitaminosis D

Hypovitaminosis D: Association of Clinical Disease with Risk Factors and Attributes in Adult Patients

Humaira Achakzai[1], Shahzada Imran Khan[2], Shahzada Bakhtyar Zahid[1], Atif Ibrahim[1], Hammad Shah[1], Muhammad Yasin[1] and Momena Faryal[1]

ABSTRACT

Objective: To find the causes of hypovitaminosis D, and its association with different risk factors.
Study Design: Cross-sectional study
Place and Duration of Study: This study was conducted at the Department of Medicine, Rehman Medical Institute Peshawar from May 2017 to April 2018.
Materials and Methods: Four hundred participants between 13-90 years were included. Those with chronic renal disease, hepatic disease, rheumatologic disease and those patients who were bed-ridden and hospitalized were also excluded.
Results: There were 128 (32%) males while 272 (68%) were females. 78% of the participants had hypovitaminosis D, most of them didn't get enough sunlight exposure due to indoor activities (74.50%), or were observing parda (55.3%). A positive correlation was seen between vitamin D levels and nature of job (r=0.48, p<0.05), sun exposure (r=0.65, p<0.001), egg consumption (r= +0.312, p<0.01) and fish intake (r= +0.306, p<0.05) in diet. However, no significant correlation was seen between vitamin D levels and milk intake (r= +0.03, p>0.05) and gender (r=0.094, >0.05).
Conclusion: Vitamin D deficiency is also an important issue of Pakistani population, which needs to be dealt with appropriate steps.
Key Words: Hypovitaminosis D, Risk factor, Cause, Association

Citation of article: Achakzai H, Khan SI, Zahid SB, Ibrahim A, Shah H, Yasin M, Faryal M. Hypovitaminosis D: Association of Clinical Disease with Risk Factors and Attributes in Adult Patients. Med Forum 2020;31(6):21-25.

INTRODUCTION

Vitamin D is a fat-soluble vitamin, which not only helps in calcium absorption from the intestine but also of magnesium and phosphate.[1] It is also essential for different physiological processes in the body and its deficiency causes multiple problems not only in musculoskeletal system but in all other systems of the body as well.[2] From central nervous system to respiratory, cardiovascular and gastrointestinal health, vitamin D plays a beneficial role.[1] It boosts our immunity, has anti-aging effect, helps in combating cancers and prevents pre-eclampsia of pregnancy.[1,3]
Hypovitaminosis D has become a global concern; affecting all age groups and both genders.[4]

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Received: January, 2020
Accepted: February, 2020
Printed: June, 2020

South Asian populations have specifically very high prevalence rates. A study in Denmark showed South Asian immigrants having very low hydroxyvitamin D3 levels.[5] Similarly a study in Karachi identified very low levels of hydroxyvitamin D3 in Pakistani adults.[6] Vitamin D is called sunshine vitamin because of sun being the main source of its production in the body. In our region, despite having optimum sunshine throughout the year, lack of vitamin D levels in general population raises a concern. Increasing urbanization, increasing trend of using sun blocking creams, living in densely populated apartments, malnourishment, poverty, illiteracy, lack of awareness, social restraints of women observing pardah and staying indoor, cultural restrain of infants, old staying indoor and adults working from dawn to dusk are the contributing factors of vitamin D deficiency in our population.[7,8] A study done in Lahore determined association of hypovitaminosis D with lifestyle factors but it did not take into account risk factors and attributes other than sunshine and primarily evolved around different lifestyle factors confronting with sunlight exposure.[9] Therefore this study is designed to find the association of low hydroxyvitamin D3 levels with different risk factors and attributes in adult patients coming to OPD of Rehman Medical Institute, after having adequate

chances of sunlight exposure throughout the year naturally.

MATERIALS AND METHODS

This is a cross-sectional study was carried out at Department of Medicine, Rehman Medical Institute Peshawar from 1st May 2017 to 30th April 2018 and included a total of 400 participants of the age group 13 to 90 years. The criteria for the family status are considered as very good: monthly income Rs. >300,000; good –monthly income between 150,000 to 300,000; satisfactory - monthly income between Rs. 40,000 to 150,000 and poor- monthly income <Rs. 40,000. The consent was taken from all of the participants before including them in the study. Weight was evaluated without shoes by using a digital weight machine. Vitamin D level is measured by CMIA 4th generation Elisa Test. Vitamin D levels ≥30ng/ml was considered normal for all the participants, while it was insufficient between 20ng/ml to 30ng/ml and deficient if <20ng/ml. Demographic information, medical history and drug history were collected by a questionnaire. Patients aged between 13 to 90 years were included. However, patients already suffering with chronic renal disease, hepatic disease, established rheumatologic diseases, bed-ridden and hospitalized were excluded. The data was entered analyzed through SPSS-23. The Eta test was used to find the correlation between dependent variable (vitamin D) and independent variables (sex, use of egg, milk and fish in diet) for nominal (sex, use of egg, milk and fish in diet) by scale data (vitamin D levels) and the p-value <0.05 was considered significant. On the other hand Pearson's correlation test was used to find the correlation between ratio or interval scales such as vitamin D levels and time of sun exposure and the p-value <0.01 was considered significant.

RESULTS

There were 128 (32%) males while 272 (68%) were females. In our study, There were 283 (70.8%) were married peoples. About 79.6% of the participants weighed between 50kg to 80kg. It is also clear from table 1 that 50% of the people felt that vitamin D was beneficial, while 4.8% thought that it is hazardous for health whereas 45.3% didn't have any knowledge about the effect of vitamin D on the body. Although most of the people belonged to the families having good (37%) or satisfactory (54.5%) living standards were from urban (42.8%), plain areas (76%) [Table 1]. The frequency of hypovitaminosis D was still very high (75.8%). The percentage of the people with vitamin D levels <20 ng/ml was more (44.3%) among females as compared to those among males (17%). Despite of the fact that 53.3% of the people were familiar with vitamin D as compared to those having no knowledge of vitamin D (46.7%). It was also observed that majority worked or performed indoor activities (74.25%) and/or observed pardah (55.25%). Therefore, many of them remained deprived of the proper sun exposure (67%) [Table 2]. The percentage of people with hypovitaminosis D (Vit D levels below 30ng/ml) was greater (86.5%) in those working indoors than those working outdoors (44.7%). Furthermore, people taking egg and fish in diet had better vitamin D levels in comparison to those not taking eggs and fish in their diets on regular basis. Of the 54.04% who did take fish in their diet, did so only occasionally (Table 3). Thus a positive correlation was seen between vitamin D levels and nature of job (r=0.42, p<0.05), sun exposure (r=+0.65, p<0.001), and egg (r=+0.312, p<0.05) and fish (r=+0.306, <0.05) consumption in diet. However, no significant correlation was seen between vitamin D levels and milk in diet (r= 0.045, p>0.05), and gender (r=0.09, p>0.05) [Table 4].

Table No.1: Demographic information of the patients (n=400)

Variable	No.	%
Gender		
Male	128	32.0
Female	272	68.0
Family		
Very good	18	4.5
Good	148	37.0
Satisfactory	218	54.5
Poor	16	4.0
Area of population		
Urban	171	42.8
Per-urban	99	24.8
Rural	130	32.4
Marital status		
Single	92	23.0
Married	283	70.8
Divorced	12	3.0
Widowed	11	2.8
Separated	2	0.2
Latitude		
Hilly area	96	24.0
Plain area	304	76.0
Vitamin D levels (ng/dl)		
<20	245	61.3
20-29	58	14.5
≥30	97	24.3
Knowledge of effects of vitamin D on body		
Beneficial	200	50.0
Hazardous	19	4.8
Do not known	181	45.2
Weight		
<50	31	7.7
50-59	75	18.7
60-69	117	29.3
70-79	126	31.5
80-89	43	10.8
>80	8	2.0

Table No.2: Vitamin D levels of different variables (n=400)

Variable	Vitamin D levels (ng/ml)		
	<20	20-29	≥30
Gender			
Male	68 (17%)	20 (5%)	40 (10%)
Female	177 (44.3%)	38 (9.5%)	57 (14.2%)
Knowledge about Vitamin D			
Yes	139 (34.7%)	33 (8.3%)	41 (10.3%)
No	106 (26.5%)	25 (6.3%)	56 (14%)
Nature of job			
Indoor	221 (55.3%)	36 (9%)	40 (10%)
Outdoor	24 (6%)	22 (5.5%)	57 (14.3%)
Sun exposure			
Yes	39 (9.8%)	29 (7.2%)	64 (16%)
No	206 (51.5%)	29 (7.2%)	33 (8.3%)
Pardah observing			
Yes	165 (41.3%)	27 (6.7%)	68 (17%)
No	80 (20%)	31 (7.7%)	97 (24.3%)

Table No.3: Vitamin D levels cross tabulated with diet

Variable	Vitamin D levels (ng/ml)		
	<20	20-29	≥30
Egg consumption in diet (n=400)			
Yes	101 (25.3%)	51 (12.8%)	70 (17.4%)
No	144 (36%)	7 (1.8%)	27 (6.7%)
Fish in diet (n=400)			
Yes	94 (23.5%)	30 (7.5%)	74 (18.5%)
No	151 (37.8%)	28 (7%)	23 (5.7%)
Frequency of Fish consumption (n=198)			
Alternate day	6 (3%)	2 (1.0%)	11 (5.5%)
Twice weekly	6 (3%)	3 (1.5%)	31 (15.6%)
Once weekly	11 (5.5%)	3 (1.5%)	18 (9%)
Occasionally	71 (35.8%)	22 (11.1%)	14 (7%)
Milk in diet (n=400)			
Yes	159 (39.7%)	43 (10.8%)	65 (16.3%)
No	86 (21.5%)	15 (3.7%)	32 (8%)

Table No.4: Correlation of vitamin D with different variables

Variable	Correlation coefficient 'r'	P value
Time of sun exposure	r= +0.69	<0.001
Use of egg in diet	r= +0.312	<0.05
Fish in diet	r=+0.306	<0.05
Nature of job	r= +0.416	<0.05
Milk in diet	r= +0.045	>0.05
Gender	r= +0.09	>0.05

DISCUSSION

Hypovitaminosis D is one of the less recognized major global health threats that humans of this age are facing. People with a variety of biophysical features and ethnic backgrounds, health status and risk factors, and lifestyles have low Vitamin D levels. It is thought that almost a billion people around the world may be suffering from low levels of vitamin D. According to studies, as much as 40–100 percent of the populations in the US are vitamin D deficient.[10] Similar numbers are reported from Europe, Africa, and South Asia.[11] In the UAE, 65.1% adolescents only in one city were either vitamin D deficient or insufficient.[12] When it comes to developing countries such as Pakistan, the situation gets even more worrisome. A study in 2016 showed that only as few as 15.3% of a large sample of people chosen across various age groups, life styles, genders, and locations had normal vitamin D levels.[13] Mansoor et al[14] determined through their study done on healthy male and female population in Pakistan that 69.9% of the subjects were found deficient and 21.1% showed insufficient levels of vitamin D.

As a standard, vitamin D deficiency is defined as 25-hydroxyvitamin D level of less than 20 ng/ml, while values between 21 ng/ml to 29 ng/ml fall in the category of vitamin D insufficiency. Similarly, a level of 30 ng/dl and more are said to have adequate vitamin D.[1] The same cut off values were used in our study.

Even though Pakistan is a country which has widespread availability of direct sunlight, however, data shows Pakistani population is more deficient in vitamin D compared to countries such as Iran, Turkey, Somalia and Norway.[15,16] Pakistan's National Nutrition Survey 2011 also revealed a high prevalence of vitamin D deficiency.[17]

Among the different sources of vitamin D, sunlight is the most important one. Naturally, it depends on a number of factors to reach the skin to form vitamin D, for instance, the geographical location, terrain, weather etc. In our study, participants were residents of the city of Peshawar. Peshawar, even though is a valley, most people live in the general level base of the valley with ample sunshine receiving around 2887 hours of sunshine in a year.[18] However, those deprived of it, be it due to the nature of their jobs, or other cultural factors, developed vitamin D deficiency as recorded in our study. Data collected from a population in Bahrain showed levels to be lower in those following a conservative lifestyle which is exactly what our studies supported whereby most women who observed Pardah were more likely to have hypovitaminosis D.[19] Fish is considered as another excellent source of vitamin D particularly more oils ones such as Salmon and Mackerel after sunlight.[20] Likewise, it was noted among the school going children who took at least half an egg every day before going to school had adequate amounts

of Vitamin D in their blood.[21] Results revealed by our study a positive correlation between dietary consumption of fish and eggs and Vitamin D levels. It is a common misconception that raw milk is a rich source of vitamin D. On contrary, our studies did not reveal any correlation between milk intake and vitamin D deficiency. This is supported by a study published in European Journal of Nutrition pressing the need for further milk fortification with vitamin D because of its poor impact on raising vitamin D levels in the blood of young men.[22]

When it comes to gender, studies from across the world have different results. Our study revealed that among the people from Peshawar valley, women were more likely to suffer from vitamin D deficiency as compared to males most likely due to less body area exposure to sun and a decreased time spent outdoors. These results are supported from data published from Kashmir[23], North India[24] and Karachi.[14,23,24] However, many other studies for instance one done on Saudi adults have the opposite result showing more prevalence among the male.[25] We also shed some light on people having adequate knowledge of vitamin D but yet had developed deficiency of vitamin D slightly more commonly than those who did not know much.

There are other possible theories too about the risk factors leading to vitamin D deficiency such as air pollution, altered vitamin D metabolism, lack of food fortification and intake of supplements etc., but the scope of our study does not look into these factors. In order to clarify the significance of each of possible etiologic factor, large scale randomized studies need to be done across various communities.

CONCLUSION

Vitamin D deficiency is a global health problem and its causes are multi-factorial. Adequate and effective steps need to be adopted to address this important health issue, like public education, national screening programs, prevention through food fortification, and treatment with vitamin D supplementation. In conclusion vitamin D deficiency is epidemic worldwide, Pakistan and many other sunny countries are no exception. Keeping in mind the consequences of vitamin D deficiency on Pakistani population, this health issue should be addressed with due attention and concrete steps.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Open Reduction and Internal Fixation in Patients with Acetabular Fractures

Functional Outcomes of Open Reduction and Internal Fixation in Patients with Acetabular Fractures

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ABSTRACT

Objective: To determine the functional outcomes of open reduction and internal fixation in patients presented with acetabular fractures.

Study Design: Prospective/observational study.

Place and Duration of Study: This study was conducted at the Department of Orthopedics, QAMC/Bahawal Victoria Hospital/Civil Hospital, Bahawalpur, Pakistan from March 2017 to February 2020.

Materials and Methods: Forty five patients of both genders with age range 20 to 65 years who presented with acetabular fractures were enrolled in this study. Patients' detailed demographics including age, sex, body mass index and causes, and site of fractures were recorded after written consent. All patients underwent open reduction and internal fixation under general or spinal anesthesia. Radiological assessment was done. Patients followed for 1 year postoperatively. Functional outcomes were assessed by Harris Hip Scoring (HHS) system. Patient's satisfaction was also examined at final follow-up.

Results: There were 32 (71.11%) males while 13 (28.89%) were females with mean age was 38.69±12.84 years. Falling was the most common cause found in 26 (57.76%) patients. Posterior column was the commonest type found in 25 (55.56%). At 1 year, 32 (71.11%) patients had excellent, 10 (22.22%) had good, 2 (4.44%) had fair and 1 (2.22%) had poor functional outcomes by HHS. 39 (86.68%) patients were very satisfied, 4 (8.89) patients were satisfied and 2 (4.44%) patients were not satisfied.

Conclusion: Open reduction and internal fixation surgical procedure is safe and effective for acetabular fractures with high patient satisfaction and excellent functional outcomes.

Key Words: Acetabular fractures, Open reduction and internal fixation, Functional outcomes, Patients satisfaction

Citation of article: Ahmed Z, Haider MI, Buzdar MI, Zafir MB, Qureshi MAM, Javed S. Functional Outcomes of Open Reduction and Internal Fixation in Patients with Acetabular Fractures. Med Forum 2020;31(6):26-29.

INTRODUCTION

Acetabular fractures are among the most serious injuries treated by orthopedic surgeons. Unfortunately, patients with fractures of the pelvis and/or acetabulum, almost always also experience serious injury to surroundings of tissue (skin and muscles) and neurovascular structures (nerves, arteries and veins).[1] High-energy trauma is the main cause in younger patients and generally associated with other fractures. Over the age of 35, fractures occur with minimal trauma because of osteoporosis.[2]

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Received: March, 2020
Accepted: April, 2020
Printed: June, 2020

Majority of acetabular fractures are associated with lower limb fractures due to falls, particularly in older individuals.[3] Incident of posterior wall fractures are 24% of acetabular fractures. Aetabular fractures generally occur in conjunction with other fractures which influence management options, surgical approach and clinical outcomes.[4]

Standard radiographs (antero-posterior, pelvic inlet, pelvic outlet & Judet views) followed by CT scan with 3D reconstruction images help the surgeons to better view the fracture geometry& decide for best treatment for the acetabular fractures. Nonsurgical treatment may be recommended for undisplaced and stable fractures. In case of dislocation of the hip joint or wide displacement of the fracture fragments, open reduction with internal fixation (ORIF) is done with plate and screw fixation to reposition the bones into their normal alignment and place. This treatment may return the patient to their pre-injury functional level to the greatest extent possible.[5] Open reduction with internal fixation is considered the right treatment method for acetabular fractures. Patients who underwent this treatment had a good result. For the general orthopedic surgeons the treatment for displaced acetabular fractures is a

challenging task. Letournel and Judet described a system for classification of acetabular fractures.[6] They classified the fractures in terms of elementary fractures and associated fractures. Operative fixation is considered the effective method for the management of displaced acetabular fracture.

The current treatment trend for acetabular fractures is open reduction and internal fixation. This treatment has reduced hospital stay. For achieving good results in acetabular fractures the prime factors are early surgical intervention and experienced management. For posterior wall and column fractures Kocher-Langenbeck approach is considered the best.[7] Whereas for anterior wall and/or column fractures anterior ilioinguinal approach can be used for stable fixation of fractures. According to the statistics 74.6% of the cases achieved excellent results using ilioinguinal approach for surgical fixation of anterior wall and/or column fractures.[8] We conducted present study with aim to examine the functional outcomes of open reduction and internal fixation in patients with displaced and unstable acetabular fractures**.**

MATERIALS AND METHODS

This prospective/observational study was conducted at Department of Orthopaedics QAMC/Bahawal Victoria Hospital/ Civil Hospital, Bahawalpur during the 1st March 2017 to 29th February 2020. A total of 45 patients of both genders with age range 20 to 65 years with acetabular fractures were enrolled. Patients' detailed demographics including age, sex, body mass index, causes, type and site of fractures were recorded. All the fractures were classified as per Letournal and Judet classification system. Patients with previous hip surgeries, patients with no consent and those unfit for anesthesia were excluded.

Pre and postoperatively X-rays and CT-scan examination were done (Figs. 1-3). All patients received open reduction and internal fixation (Kocher-Langenbeck approach and/or Ilio-inguinal approach, as indicated) under general or spinal anesthesia. Functional outcomes were assessed by using Harris Hip Scoring (HHS) system. Postoperative complications such as wound infection, nerve injury, and loss of reduction were examined. Patients were followed for 1 years postoperatively. Functional outcomes such as excellent (HHS score 90-100), good (80-89), fair (70-79) and poor (0-69) were examined. We also examined patients' satisfaction towards surgical procedure at final follow-up. All the data was analyzed by SPSS 24.

RESULTS

Out of 45 patients 32 (71.11%) were males while 13 (28.89%) were females with mean age 38.69±12.84 years. Mean BMI was 24.4±2.27 kg/m^2. Fall was the most common cause of fractures found in 26 (57.76%) patients followed by RTA in 19 (42.22%) patients. Posterior column was the commonest type found in 25 (55.56%) patients followed by posterior wall in 12 (26.67%), transverse type in 4 (8.89%) and both columns (anterior and posterior column) in 4 (8.89%) patients. 29 (64.44%) patients had right side fracture while 16 (35.56%) had left side (Table 1).

Regarding postoperative complications we found that 4 (8.89%) patients had wound infection, 1 (2.22%) patient had nerve injury and 1 (2.22%) patient with loss of reduction (Table 2). At 1 year, 32 (71.11%) patients had excellent, 10 (22.22%) had good, 2 (4.44%) had fair and 1 (2.22%) had poor functional outcomes by HHS. Overall 42 (93.33%) patients had good to excellent functional outcomes (Fig. 4). According to the patients satisfaction, 39 (86.68%) patients were very satisfied, 4 (8.89) patients were satisfied and 2 (4.44%) patients were not satisfied (Table 3).

Table No.1: Demographical details of all the patients

Variable	No.	%
Age (years)	38.69±12.84	
BMI (kg/m)	24.4±2.27	
Gender		
Male	32	71.11
Female	13	28.89
Causes		
Falling	26	57.76
RTA	19	42.22
Type of fracture		
Posterior Colum	25	55.56
Posterior Wall	12	26.67
Transverse	4	8.89
Anterior+Posterior wall	4	8.89
Side		
Left	29	64.44
Right	16	35.56

Table No.2: Postoperative complications

Complication	No.	%
Wound Infection	4	8.89
Nerve Injury	1	2.22
Loss of Reduction	1	2.22

Table No.3: Patients satisfaction at final follow-up

Patients satisfaction	No.	%
Very Satisfied	39	86.68
Satisfied	4	8.89
Not Satisfied	2	4.44

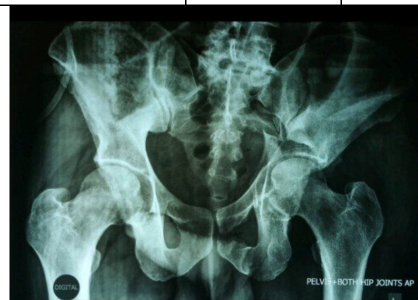

Figure No.1: Pre-operative X-ray

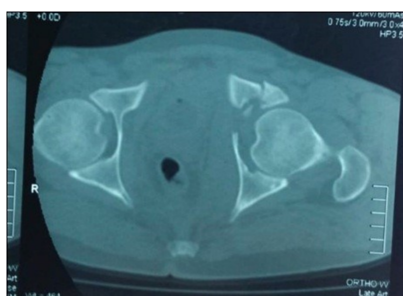

Figure No.2: Pre-operative CT scan

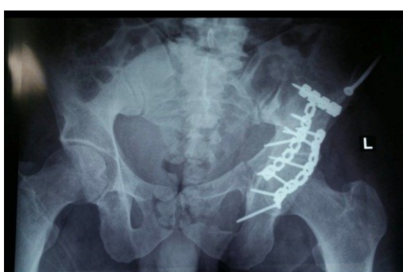

Figure No.3: Post-operative X-ray

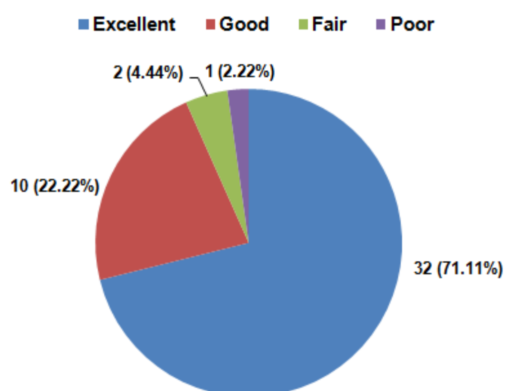

Figure No. 4: Functional Outcomes at 1 year postoperatively

DISCUSSION

Acetabular fractures are commonly found injuries in orthopedic settings. Many treatment modalities have been used for the management of these fractures but surgical fixation is considered treatment of choice for acetabular fractures.[9,10] We conducted present study with aim to examine the functional outcomes of open reduction and internal fixation in patients with acetabular fractures. In this regard 45 patients were included. Majority of patients (71.11%) were male and falling was the most frequent cause of acetabular fracture found in 57.76% followed by road traffic accident in 42.22%. The mean age of patients was 38.69±12.84 years. Mean BMI was 24.4±2.27 kg/m^2. These results showed similarity to many of previous studies regarding surgical treatment of acetabular fractures, in which male patients population was high 55% to 70% as compared to females and majority of patients were in the age group 30 to 50 years (45%).[11,12]

Some of studies reported that road traffic accident was the commonest cause of acetabular fractures followed by falling from height and some of previous studies reported that falling was the most frequent cause of acetabular fractures followed by RTA.[13,14]

In present study we found that posterior column was the commonest type found in 25 (55.56%) patients followed by posterior wall in 12 (26.67%), transverse in 4 (8.89%) and both anterior and posterior column in 4 (8.89%) patients. 29 (64.44%) patients had right side fracture while 16 (35.56%) had left side. A study conducted by Kandasamy et al[15] reported that posterior column was the commonest variety in 4375% patients followed by anterior and posterior column in 31.25% patients. Anizar-Faizi et al[16] reported that posterior wall was the commonest type in 46.7% patients followed by bicolumnar.

In our study, regarding postoperative complications we found that 4 (8.89%) patients had wound infection, 1 (2.22%) patient had nerve injury and 1 (2.22%) patient with loss of reduction. These results were comparable to some previous studies.[14,17]

In present study at final follow-up we found that 32 (71.11%) patients had excellent, 10 (22.22%) had good, 2 (4.44%) had fair and 1 (2.22%) had poor functional outcomes by HHS. Overall 42 (93.33%) patients had good to excellent functional outcomes. Praveen et al[18] reported that 42.1% patients had excellent, 15.8% had good, 21.05% had fair and 21.05% had poor radiological outcomes at final follow-up. Ramji Lal Sahu[19] reported that open reduction and internal fixation had good functional outcomes, his study showed 60.86% patients had excellent, 21.73% had good, 8.69% had fair and 8.69% had poor functional outcomes. A study conducted by Sagar et al[20] reported in their study regarding surgical outcomes of acetabular fractures, 49.1% patients had excellent, 27.3% had good, 16.4% had fair and 7.3% had poor functional outcomes.

In this study we also examined patients satisfaction regarding surgical procedure and found that 39 (86.68%) patients were very satisfied, 4 (8.89) patients were satisfied and 2 (4.44%) patients were not satisfied. These results showed similarity to many of previous studies in which majority of patients 90% were satisfied towards surgical fixation for acetabular fracture.[21,22]

CONCLUSION

Open reduction and internal fixation surgical procedure is safe and effective for acetabular fractures with higher patient satisfaction and excellent functional outcomes and fewer rate of complications. We found that overall 42 (93.33%) patients had good to excellent functional outcomes.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Role of Tobacco in Laryngeal Carcinoma

Role of Tobacco in Laryngeal Carcinoma

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ABSTRACT

Objective: To Study the Role of Tobacco in Laryngeal Carcinoma.
Study Design: Observational Study
Place and Duration of Study: This study was conducted at the Department of ENT, Khuwaja Muhammad Saffdar Medical College, Sialkot and Sialkot Medical College, Sialkot from Jan 2016 to Jan 2020.
Materials and Methods: One Hundred patients of Laryngeal Carcinoma were included in this study. Most of the patients were smokers. The history and clinical examination was taken in all of the patients. The Biopsy of all the patients of laryngeal carcinoma was also taken in these patients. The Demographic data was recorded in designed Performa. The written informed consent was considered from every sick person included in the study. The permission of Ethical committee was also taken before collection of data and get publishing in the medical journal. The results were analyzed on SPSS version 10.
Results: The incidence of Laryngeal Carcinoma in Smokers was highest in age group (51- 60years) 24% and lowest in age group (71-80years) 07%. It was also observed that incidence was highest in male 88% as compare to female 12% because male has more involvement in Tobacco smoking. The smokers are urban area 54% are more prone to Laryngeal Carcinoma as compared to rural area 46%. The incidence of Laryngeal Carcinoma was highest 50% in lower class of population as compare to middle 40% and upper class 10% of people. The incidence of Laryngeal Carcinoma was highest in tobacco users 35% and lowest in cigrate+huqqa users 10% and smoking+tobacco chewing 10%.
Conclusion: The conclusion was drawn from the study that most of the patients of laryngeal Carcinoma were smokers.
Key Words: Smokers, Laryngeal Carcinoma

Citation of article: Qureshi J, Rehman S, Razi S, Haider I. Role of Tobacco in Laryngeal Carcinoma. Med Forum 2020;31(6):30-34.

INTRODUCTION

In mankind's history, tobacco inward breath dates as far back as five thousand BC when it was utilized for different strict, restorative and later something on purposes, however no particular notice is written in the bible.[1] The most widely recognized method of tobacco inward breath is tobacco using.[1] In the intergovernmental agency of Research of Cancer (IARC) an aspect of, it was inferred that there was adequate proof that the propensity could condition lung malignant growth, yet additionally diseases of the respiratory tract and the upper part of the digestive tract including the larynx, pharynx and upper part of oesophagus.[1]

In Kenya, malignant growth as a malady positions 3rd as a reason for death after irresistible and heart and blood vessels diseases.[2] Recently Kenya has no dependable malignancy library and information accessibility is insufficient and chiefly emergency clinic depends upon. It was accounted for that in 2005, around 18000 deaths were because of malignant growth, with most casualties in younger than seventy years.[2] Mutuma and colleagues[2] discovered that head and neck disease, of which of larynx malignant growth was generally normal, is the main disease in guys at fourteen point eight percent in Kenya, and is third among women after disease of the bosom and the narrow passage forming the lower end of the uterus. Besides, there is by all accounts a consistent ascent in the rate of the part of the body that joins the *head* to the shoulders malignancy, as confirm by patterns archived by Mutuma and colleagues.[2] Onyango and colleagues[3,4] revealed a thirty nine percent commonness of larynx disease among sick person with the part of the body that joins the *head* to the shoulders malignancy (n = seven thousand ninety three) trailed by tumors of the tongue, mouth and the nose and pharynx, in a specific

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Received: February, 2020
Accepted: March, 2020
Printed: June, 2020

manner. This varies with prior findings from the Kenyatta National Hospital in sick person confirmation library that indicated larynx malignancy as the 3rd generally normal after larynx and oral diseases. Nonetheless, Nyandusi in his thesis study [University of Nairobi two thousand seven] in a similar clinic indicated that malignant growth of the laryngeal was presently the most widely recognized head and neck cancer followed by nasopharyngeal, thickened fold on the floor of the mouth and oral ones in a specific manner. Explicit and nitty gritty records on the sum, the style and length of tobacco user corresponding to malignant growth of the laryngeal were not done. These examinations didn't have the course of events gatherings and no measurable challenging was finished.

During cigrate using inward breath, the bigger particles are fundamentally kept to the mucous lining of the larynx, during motivation. The smaller than coarse particles have been demonstrated to be stored throughout optional streams produced by disturbance made by the decreased cross sectional territory and tangled topographic life structures of the larynx of man.[5] Further statement happens during breath putting out period of tobacco using, particularly concerning the fine and small scale very small particles.[7] Martonen and colleagues[6] indicated that the upper level testimony of tobacco emitted from a burning to this site inclined it to a upper level rate of malignant growth contrasted with different districts of the aviation route. This is bolstered by an investigation by Yang[8] that indicated a 3,000-overlap possibility of upper aviation route malignant growth contrasted with lower aviation route disease. The nearness of laminar progression of tobacco burring in all the areas of the aviation route separated from the tight larynx is called to clarify this expanded danger.[7]

Interminable presentation of above aviation route the thin tissue forming the outer layer of a body to tobacco burring has been appeared to incite premalignant psychological changes. These progressions are joined by expanding elating to chromosomes harm, which prompts development of a populace of the change from one type of cell to another. It has likewise has been discovered that pneumonic. The macrophage in the pulmonary alveolus are enacted by tobacco Carbon particle to deliver an oxide containing the anion O_2 strong oxidizing properties, which additionally form being oxidized harm to deoxyribonucleic acid, while ribonucleic acid and add to the danger of cancer causing.[8]

The dangers related with tobacco burring are additionally altered by liquor utilization in a multiplicative way. Liquor ingestion builds malignant growth hazard by expanding topical retention of tobacco cancer-causing agents and acceptance of microsomal catalysts, prompting expanded age of tobacco cancer- causing agents that dilemma to deoxyribonucleic acid.[9] Because of this collaboration, tobacco burring ought to be analyzed inside the setting of liquor using.[10]

Taking into account the way that malignancy laryngeal is presently the most widely recognized the part of the body that joins the head to the shoulders disease in Kenya, we tried to survey tobacco burring, which is known to be the most significant hazard reflecting their origin from the skin of the larynx (SCC). The scarcity of neighborhood information shows an information hole; chance factor evaluation has not been systematically concentrated as for the part of the body that joins the head to the shoulders disease. This study will shape a reason for a period of time following the moment of speaking arranging systems planned for decreasing the weight of this malignancy through decrease of cigarette smoking.

MATERIALS AND METHODS

This study was conducted at the Department of ENT, Khuwaja Muhammad Saffdar Medical College, Sialkot and Sialkot Medical College, Sialkot from Jan 2016 to Jan 2020. One Hundred patients of Laryngeal Carcinoma were adjusted in this study. Most of the patients were smokers and less of the patients were non-smokers. The history and clinical examination was taken in all of the patients. The Biopsy of all the patients of laryngeal carcinoma was also taken in these patients. The Demographic data was recorded in designed Performa. The written informed consent was considered from every sick person included in the study. The permission of Ethical committee was also taken before collection of data and get publishing in the medical journal. The results were examin on SPSS version 10.

RESULTS

The incidence of Laryngeal Carcinoma in Smokers was highest in age group (51- 60years) 24% and lowest in age group (71-80years) 07%. It was also observed that incidence was highest in male 88% as compare to female 12% because male has more involvement in Tobacco smoking as shown table no: 1.

Table No. 1: Age and Gender Distribution in Smokers in Laryngeal Carcinoma

Age (Years)	Male	**Female**	**Total**	Percentage°A
40 - 45	09(9%)	05(05%)	14	14%
45 - 50	21(21%)	02(02%)	23	23%
51— 60	28(28%)	02(02%)	30	24%
61-70	24(24Po)	02(02@o)	26	26@o
71-80	06(06P»)	01(01%)	07	07%
Total	88(88%)	12(12%)	100	100%

Table No. 2: Area Distributions in Smokers in Laryngeal Carcinoma

Distribution	No. of Patients	Percentage°A
Rural	46	46@o
Urban	54	54@o
Total	100	100Po

The smokers are urban area 54% are more prone to Laryngeal Carcinoma as to examine to rural area 46% as shown in table no: 2.

The incidence of Laryngeal Carcinoma was highest 50% in lower class of population as compare to middle 40% and upper class 10% of people as shown in table 3.

The incidence of Laryngeal Carcinoma was highest in tobacco users 35% and lowest in cigarette+huqqa users 10% and smoking+tobacco chewing 10% as shown in table 4.

Table No. 3: socioeconomic status distributions in smokers in Laryngeal Carcinoma

Socioeconomic status	No. of patients	Percentage°A
Lower	50	SOP
Middle	40	40Po
Upper	10	10a
Total	100	100%

Table No. 4: Tobacco habits in distributions in smokers in Laryngeal Carcinoma

Habits	No. of patients	Percentage•A
Tobacco users	35	35Po
Cigarette only	25	25a
Huqqa only	20	20Po
Cigarette + Huqqa	10	10a
Smoking + Tobacco chewing	10	10Po
Total	100	100%

DISCUSSION

This remarkably enormous dataset affirms a solid job of tobacco on laryngeal disease hazard.

Sub cerosal carcinoma (SCC) of the larynx is the most widely recognized the part of the body that joins the head to the shoulders malignancy between male in Kenya and the 3rd generally basic between ladies in Kenya as observed at ear nose and throat ENT and X-Ray of carcinoma branches of Kenyatta National Hospital.[2] It is, nonetheless, realized that laryngeal Sub cerosal carcinoma (SCC) is a dominatingly men ailment, potentially in light of the way that male inclined expend more liquor and use more tobacco than women, as is found in different pieces of the world.[1]

The man-to-woman proportion in this arrangement was twenty four: one, affirming the solid relationship of hazard with the man sex, and is like discoveries by Oburra and colleagues[12] in a prior distribution in this locale. This is practically identical to what has been discovered the world over. To be sure, a few investigations in a methodical survey completed by Far had and colleagues fourteen indicated hundred percent man commonness while the other demonstrated man power. Man to woman proportions ran from nine: one to twenty five: one, particularly those examinations done in North America, a few pieces of South Europe and Asia.[13] The purpose behind this circulation was referred to be a more significant above or below of maltreatment of tobacco and liquor between guys contrasted with women, like ends from the KDHS overview in two thousand nine.[14] This speculation is additionally upheld by condition of interest study completed by Sylvano and coIleagues[15] between woman sick person determined to have larynx Sub cerosal carcinoma (n = sixty eight), which demonstrated cigarette using as the most significant hazard level of larynx Sub cerosal carcinoma followed by liquor utilization. He likewise discovered that conceptive and relating to or containing a hormone or hormones elements were not reliably connected with expanded hazard for larynx carcinomas. The high man-to-woman proportion discovered in the present investigation is subsequently reliable with what has been discovered in the remainder of the world.

Out of the fifty exploratory gathering sick persons in this examination, thirty three of them (sixty six percent) were present cigarette users contrasted with controls where just three (six percent) smoked. Patients who are present smokers had a critical hazard for larynx Sub cerosal carcinoma all in all contrasted with controls (OR = thirty point four) whether or not they used liquor. This outcome is similar to those discovered by Franceschi and colleagues[16] in North Italy, where ORs ran from two to fifteen point six for the most limited and most prominent spans separately. A meta-investigation completed by Hashibe in focal Europe[17,18] indicated comparable discoveries with an OR of 12.83 for cigarette smokers just and an OR of 36.7 for the individuals who likewise expended liquor.

This might be clarified by the way that the KDHS[14] overview's most extreme age extend was forty five — forty nine years, though the normal time of experimental in this examination is sixty one years. Besides, the experimental were medical clinic participate and accordingly their qualities may not contrast well and a populace participate gathering, as this gathering has been taught about the hurtful impacts of cigarette using and liquor admission during center participation. Most sick persons in this examination used sifted cigarettes, which is reliable with discoveries over the world, despite the fact that we didn't get the method of relieving the tobacco. The impact of separating on SCC hazard was, be that as it may, not measurably noteworthy.

Different investigations directed previously[16,18-23] have shown a decreased hazard for laryngeal SCC in the wake of smoking end, in spite of the fact that the level of diminished hazard contrasts extraordinarily relying upon the age and time since suspension. Bosetti and colleagues[18,22,23] demonstrated that the individuals who quit cigarette using before the age of thirty five years or who quit using for over twenty years didn't have an altogether more hazard than people who had never cigarette used. Results in this examination manifest that there is a dynamic fall in chance in the wake of smoking discontinuance, which is clear much under 10 years of stopping (OR = 19.5) and is like discoveries in past str. In this investigation there is a general expanded hazard for larynx Sub cerosal carcinoma with an OR of two point three (P < zero point zero zero five, ninety five percent CI: one—five point four).[16-19] On the other hand, cultural inclinations and disgrace vary among nations and may modify how the investigation members react.

Subsite appropriation of laryngeal malignant growth has been demonstrated to be hazard cannot be directly observed[21] different kinds investigations have indicated an expanded hazard for the opening between the vocal cords in your throat disease between those sick persons who used cigarette just, though the individuals who smoked and drank liquor created supraglottic malignancy more than he opening between the vocal cords in your throat cancer.[21] Other examinations have, be that as it may, questioned these discoveries. For example, Hashibe and colleagues[18] discovered comparable dangers among supraglottic and glottic disease. The current examination is in concurrence with these previous investigations, indicating a solid hazard for glottic malignancy among patients who smoked cigarettes.

Besides, the outcomes in the current examination propose that being a previous smoker gives a positive.

CONCLUSION

The conclusion was drawn from the study that most of the patients of laryngeal Carcinoma were smokers.

Author's Contribution:

Concept & Design of Study:	Javeed Qureshi
Drafting:	Shafiq ur Rehman
Data Analysis:	Saeed Razi, Irfan Haider
Revisiting Critically:	Javeed Qureshi, Shafiq ur Rehman
Final Approval of version:	Javeed Qureshi

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Arthrodesis for Advanced Arthritis

First Metatarsophalangeal Joint Arthrodesis Using Flat Cut Technique and Fixing With Staples: A Review of Outcome

Muhammed Ahmed Mansoor and Muhammad Ehtesham Siddiqui

ABSTRACT

Objective: First metatarsophalangeal joint (MTPJ) arthrodesis is a gold standard procedure for advanced arthritis of the first MTPJ. The purpose of this study is to determine clinical, radiological, functional outcomes and complications of first MTPJ arthrodesis using flat on flat cut and fixing with two Shape-Memory Nitinol staples.
Study Design: Retrospective study
Place and Duration of Study: This study was conducted at the Department of Trauma and Orthopaedics Surgery, Solihull hospital, part of the University Hospitals Birmingham, UK from 2014 to 2018.
Materials and Methods: Patients who underwent first MTPJ arthrodesis for primary osteoarthritis by the single surgeon (main author) from 2014 to 2018 were selected for the study. Preoperative and post-operative clinical and radiological findings, AOFAS Foot and Hallux scores, patient satisfaction rating and any complications were noted.
Results: Thirty fivepatients, 37 feet, 2 patients had bilateral foot surgery at two different occasions, were found after the selection and exclusion criteria. 22 (63%) females and 13 (37%) males. Mean age was 63 years (range 35-8). The mean follow up of was 11 weeks (range 8-32 weeks). Union occurred in 33 cases including 3 cases of delayed union. 4 cases developed non-union, of these, 1 case was infective non-union. Average improvement in AOFAS score was 45(23-70). 42 (70%) of patient rated their outcome as Excellent, 14(20%) as good, 2(5 %) as fair and 2 (5%) rated as poor.
Conclusion: First MTPJ arthrodesis using Shape-Memory Nitinol staples resulted in 89% union rate. Patients had average of improvement 44 points on AOFAS score and 90% rated good to excellent satisfaction. These results are comparable with national average results.
Key Words: Metatarsophalangeal joint arthrodesis staples

Citation of article: Mansoor MA, Siddiqui ME. First Metatarsophalangeal Joint Arthrodesis Using Flat Cut Technique and Fixing With Staples: A Review of Outcome. Med Forum 2020;31(6):35-39.

INTRODUCTION

Arthrodesis of the first metatarsophalangeal joint (MTPJ) has been reported as gold standard for the treatment of advanced hallux rigidus.[1]

The aims of first MTPJ arthrodesis are to improve pain, function, and achieve optimum toe alignment. There are many surgical techniques described in the literature to achieve bony union at the fused joint, but no single technique is considered to be exclusive[2-11]. The surgical technique used for the joint fusion depends upon surgeon's preference and the availability of the hardware.

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Received: January, 2020
Accepted: February, 2020
Printed: June, 2020

The reported union rates with different techniques vary from 88% to 100%[12-14]. The purpose of this study is to determine the clinical, radiological, functional outcomes and complications of first metatarso-phalangeal joint fusion using flat cut technique and fixing with Shape-Memory Nitinol staples.

MATERIALS AND METHODS

This retrospective study was conducted at the Department Trauma and Orthopaedics, Solihull hospital, part of the University Hospitals Birmingham, UK. Clinical data was retrieved for the cases which had first MTPJ arthrodesis for primary osteoarthritis of the first MTPJ operated by the main author during the period 2014 to 2018 and have at least 8 weeks of follow up before discharge or change in management due to any complication. All cases which had concomitant any other painful condition of the involved foot was excluded from the study. Based on the above criteria 35 patients (37 feet, 2 patients had bilateral surgery) were available for the study. Their clinical records, radiological studies and Outcome results were collected. A modification of American Orthopaedic Foot and Ankle Society (AOFAS) clinical rating system for the Hallux Metatarsophalangeal-Interphalangeal

Scale, has been used by the operating surgeon at the time of pre-operative assessment on the day of surgery and then at the time of final clinic consultation before discharge or when there was change in patient management due any complication noted. The standard AOFAS score has 100 points which include MTPJ range of movement domain carrying 10 points. However, for the purpose of this study as the MTPJ range of movement domain was not applicable in the final outcome assessment, this domain was omitted in both pre-operative and final outcome assessments, giving maximum score of 90 points. The patients were asked to rate their overall satisfaction as poor, fair, good or excellent.

Pre-operative X-rays were studied to note the grading of the osteoarthritis of the first MTPJ and hallux alignment. The MTPJ arthritis was graded according to Coughlin and Shurnas system.[6] (Table 1, Fig 1). Radiographic union was defined as osseous bridging of 3 out of 4 cortices on AP and lateral radiographs. The union was considered a delayed union if it occurred between 3 to 6 months. If there was no union according to the above definition by the end of 6 months, the case was diagnosed as non-union and different management strategy was used. Post-operative x-rays were studied to assess the union of arthrodesis and hallux alignment. (Fig 2).

Operative Technique: All patients underwent a standard operative technique and postoperative regimen. The patient was positioned supine on the operating table with a sandbag under the buttock on the operative side. Prophylaxis antibiotics were given at the time of induction. A padded thigh tourniquet was applied with pressure at 300 mmhg. A standard dorsal longitudinal incision centred over the MTPJ about 4cm was made, just medial to the Extensor Hallucis Longus tendon (EHL). A deeper dissection was done down to the joint capsule protecting the EHL tendon on the lateral side of the wound. A longitudinal capsulotomy incision was made in the line of skin incision, to open the joint. The capsule edges are preserved for later closure after fixing the joint.The articular surfaces of the joint were examined regarding extent and severity of the arthritis. All osteophytes and any inflamed synovial tissue were removed. Flat biplanar cuts weremade with saw on the metatarsal head and phalanx base taking into account the extent and direction of the deformity so that after the cut surfaces were opposed the hallux would have a valgus of about 5-10 degrees and extension from the floor of about 5-10 degree. The fresh cut bony surfaces were prepared with pepper potholes with a 2mm k wire or a drill bit to encourage bone fusion. The position was held with a K-wire passed obliquely across the opposed joint surfaces from proximal medial metatarsal shaft to distal lateral into proximal phalanx. The joint was held using two Shape-Memory Nitinol staples fixing at right angle to each other, one vertical in dorsal midline across the joint and the other mid horizontal along the medial side. Wound was closed in layers with absorbable sutures. Patients were discharged home mobilising in flat stiff sole post op surgical shoe. All the patients had their first post-operative review by the GP or Nurse for wound check and removal of any sutures, ten days after discharge.

The patients were followed in the hospital clinic at six weekly intervals until union was confirmed and patient mobilizing full weight bearing in their standard footwear. In case of non-union, patient was further investigated with a CT scan to assess the status of union or non-union. At the final consultation patients were re assessed according to the AOFAS score and Satisfaction rating.

RESULTS

Thirty five patients involving 37 feet, 2 patients had bilateral foot surgery, were found after the selection and exclusion criteria. There were 23 (62%) female feet and 14 (38%) male feet. The mean age for both male and female patients was 63 years (range 35-85). Among the male patients 4 had surgery on the left,8 had surgery on the right foot and 1 patient had surgery on both feet. Among the female patients 13 left and 8 right foot was operated, and 1 patient had surgery on both feet. The patients who had bilateral surgery, each foot was operated at different occasion with time difference of 14 months to 2 years between surgery on the two sides. 13 cases were graded as 3 on Coughlin Shurna's grading system and 24 case of grade 4.

All the patients had their first post-operative review by the GP or Nurse for wound check and removal of any sutures, 10 -14 days after discharge from the hospital. The patients were then reviewed in the hospital orthopaedic clinic at six weeks having clinical assessment and x-rays. The patients were then followed up at six weekly intervals until both clinical and radiological union was confirmed and patients were able to mobilise full weight bearing in their own standard footwear.

The average follow up period was 11 weeks (8-32). Average time to union of arthrodesis for males was 11 weeks (8-20) and in females was 11weeks (12-28). There were two cases of delayed union in females which took 16 and 28 weeks to unite and one case of delayed in a male patient which took 20 months to unite.

Union occurred in 33 feet including 3 cases of delayed union. There were 4 cases of non-union (10%) one male and threefemales. One male non-union was due to infection.One female patient with non-union had a broken vertical staple at 10 weeks. 3non-union cases were revised with plate fixation and bone graft. One female case with non-union was asymptomatic and the patient decided not to have any revision surgery.

There were two cases of low grade superficial wound infection noticed at the first check at 2 weeks by the GP. These were treated with a course of oral antibiotics for 5 days resulting in complete resolution of infection and wound healing. Both these cases had complete union.

The average AOFAS score at before surgery was 42 (range 15-67). The AOFAS average score at final assessment after the surgery was 87 (range 77-90). The improvement in AOFAS score averaged at 45 (range 20-70). On satisfaction rating 22 (60%) of patient rated their outcome as Excellent, 11(30%) as good and 2(5 %) as fair and 2 (5%) rated as poor. There was on mild difference between male and female patient satisfaction rating. Table 2.

Table No.1: Coughlin and Shurnas Classification

Grade	Clinical Findings	Radiological Findings
Grade 0	Stiffness	Normal
Grade 1	mild pain at extremes of motion	mild dorsal osteophyte, normal joint space
Grade 2	moderate pain with range of motion increasingly more constant	moderate dorsal osteophyte, <50% joint space narrowing
Grade 3	significant stiffness, pain at extreme ROM, no pain at mid-range	
Grade 4	significant stiffness, pain at extreme ROM, pain at mid-range of motion	

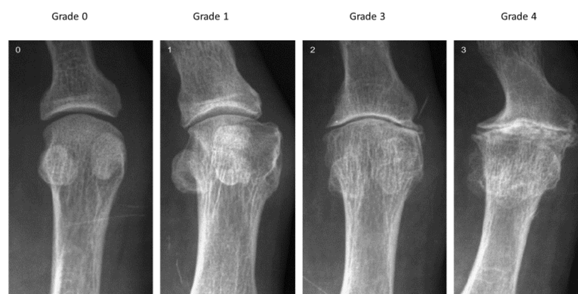
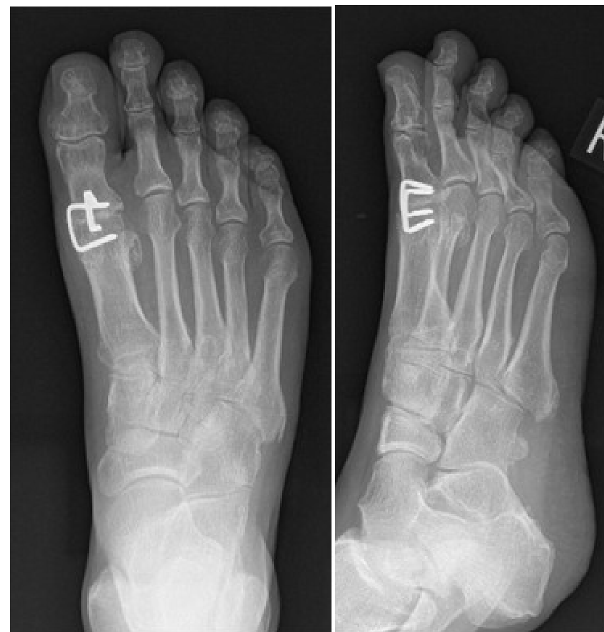


Figure No.1: Radographic system.

Table No.2 Patient Satisfaction Rating

	Male	Female	Combined
Excellent	50% (n=14)	67% (n=28)	60% (n=42)
Good	43% (n=12)	19% (n=8)	29% (n=20)
Fair	7% (n=2)	7% (n=3)	7% (n=5)
Poor	0% (n=0)	7% (n=3)	4% (n=3)



AP View Oblique View

Figure No.2: Postoperative Foot X-rays

DISCUSSION

Hallux rigidus is a progressive condition that leads to osseous and soft tissue changes causing stiffness, inflammation, and pain.[15] Patients complain of pain with weight bearing particularly during the push-off phase of the gait. Examination confirms dorsal tenderness and restricted dorsiflexion of the first MTPJ. In extreme cases where the joint has become completely stiff, the patient may complain very little or no pain at all.

The management of symptomatic hallux rigidus begins with nonsurgical treatments. Nonsteroidal anti-inflammatory drugs (NSAIDs), intra-articular steroid injections, orthotics, and shoe modifications designed to limit MTP joint motion can all be used.[16]

First metatarsophalangeal joint fusion is a gold standard procedure for the treatment of advanced arthritis of the first MTPJ which has not responded to non-operative measures. There are many techniques described in the literature to prepare the joint surfaces and various methods of fixation to achieve fusion. These include planar flat cuts, cup cone reaming and arthroscopic removal of articular cartilage. The prepared joint surfaces are then fixed with different techniques, including staples, K wires, Cross screws, Plate fixation with or without lag screw.[17-22]

Flat on flat planar cuts for preparing joint surface for the purpose of arthrodesis can be done through a relatively smaller exposure as compared to cup and cone reaming technique. The flat cut technique requires complete understanding of the MTPJ shape and toe alignment. The cuts are usually biplanar and are made to correct the deformity in both the sagittal and coronal

axis keeping the neutral rotation of the hallux. It is important to align the toe in 5-10 degree dorsiflexion from the floor to ensure adequate flexion of the interphalangeal joint for comfortable walking. The final valgus angle of the hallux is kept at 5 to 15 degrees.[23]
Any varus alignment of the toe must be avoided as this would cause difficulty in wearing dress shoes and transfer pain in the forefoot.
The main advantage of the staples used in this study is their low profile hence less irritant to soft tissues which is a concern around the big toe. The Shape-Memory Nitinol staples provides continuous compression across the fused joint surfaces.
In this series, an overall radiological union rate of 89.2%. The radiological non-union rate of 10.8% is within the range reported in the literature ranging from 8% to 14%.[13,26-30]
The patients are encouraged for early weight bearing in the immediate postop period using stiff soled post op surgical shoes. Many patients can mobilise in these shoes without any walking aid; however, some may need one or two crutches in the initial post-operative period. The clinical and radiological union rate in this series is comparable as reported in a retrospective review of immediate weight bearing after first MTPJ fusion.[27]
The Staple fixation is a recommended technique.[31,32] It is technically less challenging as compared to other fixation methods of first MTPJ. Other advantages include smaller exposure, low profile, less soft tissue irritation.
There was one incidence of metal failure leading to non-union and subsequently requiring revision arthrodesis. A detailed review of the case suggested that perhaps the patient started unprotected full weight bearing before the clinical or radiological evidence union, resulting in metal fracture. This patient was treated with revision arthrodesis using plate fixation and bone graft.
There was one case of asymptomatic non-union in this study. The patient had complete non-union, confirmed on the CT scan at six months. The patient was managing well in comfortable footwear. This patient decided against any revision surgery.
One patient had an infection that did not respond to antibiotics. This case had debridement, removal of the staples and revision arthrodesis with plate fixation and bone graft.
Two patients with non-union were heavy smokers. It is well established in the literature that smokers have twice the risk of developing a non-union afterarthrodesis or treatment of non-union. (25) Smokers also have longer union time following a fracture or arthrodesis. Smokers should be encouraged to quit or abstain from smoking to avoid non-union or delayed union.
The reoperation rate (3 cases) in this studywas 8.1% which is comparable to 4% to 18.7% reported in the literature.[13, 24, 29]
Limitations of this study include retrospective review, small cohort and a single surgeon series with patients being followed up in his clinic and as such intra-observer errors or bias cannot be ignored.

CONCLUSION

Hallux rigidus is a common condition seen by orthopaedic foot and ankle surgeons. Arthrodesis of the first MTP joint remains the gold standard option for advanced arthritis. This study concludes that first metatarsophalangeal joint arthrodesis using flat on flat cut technique and using two staples for fixation is a simple technique with good outcome results and is recommended for the treatment of advanced osteoarthritis of the joint.

Author's Contribution:

Concept & Design of Study:	Muhammed Ahmed Mansoor
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Data Analysis:	Muhammad Ehtesham Siddiqui
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Final Approval of version:	Muhammed Ahmed Mansoor

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Efficacy of Racecadotril for Watery Diarrhea

To Study the Efficacy of Racecadotril for Treatment of Acute Watery Diarrhea in Children

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ABSTRACT

Objective: To study the efficacy of racecadotril on decreasing no of stools in pediatric population presenting with acute watery diarrhea to decrease the length of hospital stay.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Pediatric Unit MTI, Mardan Medical Complex from April to August 2019.

Materials and Methods: 120 children, aged 6 months to 2 years, were included and placed on random basis in a racecadotril or placebo group. Criteria of inclusion was patients diagnosed with acute gastroenteritis. Patient having any other disease or allergy were excluded. Racecadotril and placebo were given at a dose of 10 mg p/o TDS for children below 1 year, 30mg P/O TDS for children above 1 year. Data were collected and analyzed in SPSS 20.

Results: Mean age was 9.8 months. Females were 45.8% whereas males were 54.2%. Stool frequency at 48 hours in Racecadotril group were significantly decreased with a (mean of 5.10/SD 2.589/ P-value 0.012 as compared to Placebo (mean of 7.22 /SD 2.835). Mean age was 9.8 months. females were 45.8% whereas males were 54.2%. Stool frequency at 48 hours in Racecadotril group were significantly decreased with a (mean of 5.10/SD 2.589/ P-value 0.012 as compared to Placebo (mean of 7.22 /SD 2.835). Length of hospital stay was lower in racedo category 76.40 hours /SD 31.08610/P – value: 0.029 as compared to placebo with a mean of.92.400 hours /SD 38.9816. Length of hospital stay was lower in racedo category 76.40 hours /SD 31.08610/P – value: 0.029 as compared to placebo with a mean of.92.400 hours /SD 38.9816.

Conclusion: We have concluded from this study that racecadotril can be effectively used for treating acute gastroenteritis in pediatric population. It decreases stool frequency that will reduce duration of hospital stay.

Key Words: Racecadotril¸ Treatment, Acute Watery Diarrhea, Children

Citation of article: Khan N, Muhammad QK, Kiramat Ullah, Fazil M, Ali A, Afridi RU. To Study the Efficacy of Racecadotril for Treatment of Acute Watery Diarrhea in Children. Med Forum 2020;31(6):40-43.

INTRODUCTION

In children, acute gastroenteritis is very common. Its characteristics are acute diarrhea with or without vomiting. It is defined by passing 3 or more loose stools in a day (or more than what is normal for that person), that lasts for no more than two weeks.[1,2]

Diarrhea is a major global issue that causes very huge impact on social and financial sector. About 1.9 million children die annually due to diarrhea.[3] One of the major causes of under nutrition in pediatric population below 5 years of age is diarrhea. [4]

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Received: January, 2020
Accepted: February, 2020
Printed: June, 2020

It is common cause of morbidity and mortality within pediatric population of under developed countries with estimated 2 million deaths annually.[5]

The causative organism is rotavirus. Treatment is primarily aimed at the correction of dehydration and electrolyte abnormality.[6]

Racecadotril (acetorphan) inhibits enkephalinase so that it dosenot allow splitting of endogenic opioids (enkephalins) which then acts on receptors in gastrointestinal tract thereby decreasing water and electrolytes secretion in intestines with no impact on intestinal motility.[7-10]

It is safe and effective to use orally in pediatric population as well as in adults diagnosed with acute gastroenteritis.[11]Racecadotril when given as adjunct therapy is more efficacious and less expensive in comparison to ORS used alone.[12-14] It is recommended to use racecadotril with oral rehydration therapy. According to the NICE guidelines.[15]

MATERIALS AND METHODS

It was cross sectional study with Non Probability Consecutive Sampling conducted at Pediatric Unit Mti

Mardan Medical Complex from April to August 2019. The study was approved by ethical committee.

Children aged 6 months to 2 years who had passed3 or more loose stools in a day (or more than what is normal for that person), lasting less than 2 weeks were included for the study. Written informed consent was taken from parents.

Exclusion Criteria: Severe dehydration[16].

Allergy to racecadotril

Children who had severe vomiting.

Patients in renal failure.

Patients in liver failure

Children who received probiotics/antibiotics or other anti diarrheal medications.

Clinical parameters like height and weight of the patients were noted by attending physician. Patient Hydration status were classified according to WHO scale[16], after initial treatment recommended by who for mild to moderate dehydration, patients were categorized in a random way into two categories, one being racecadotril and the other placebo .patients in the racedo group received racecadotril dissolved in ORS at a dose recommended by the manufacturer: 10 mg per dose three times a day for children below 12 months of age and 30 mg thrice a day for those over 12 months of age. the placebo group received placebo(ORS without racecadotril) at equal doses to the racecadotril group. Patients were instructed to dissolve one sachet in a cup of water having ORS and drink thrice a day.

Patients were daily enquired about the number of stools and consistency of stools, treatment was continued till the cessation of diarrhea.

The criteria of cessation of diarrhea was passing of two formed stools successively or if the patient didn't pass any stool for 12 hours.[7,15]

Primary outcome was no of stools during the 72 hrs period, secondary outcome was length of hospital stay.

Descriptive statistics for age, gender were documented in the form of mean, standard deviation, percentages. To compare results of both groups cross tabulations, bar charts andchi-square test were used. SPSS 20 was used for the analysis of data. The P-value of <0.05 was considered as statistically significant.

RESULTS

120 patients were enrolled for research and were randomly assigned into two groups, one group received Racecadotril and the other group received Placebo.

Mean age was 9.8 months. Females were 45.8% whereas Males were 54.2%.

The baseline features like demographics and clinical presentation had no major differences. After receiving Racecadotril frequency of stools at 48 hrs decreases significantly with a (mean of 5.10) SD 2,589 P-value 0.012 as compared to Placebo where the mean no stools at 48 hrs is significantly higher than the Racecadotril group having mean of 7.22 SD 2.835.

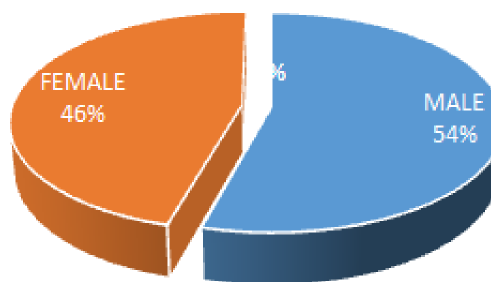

Figure No.1: Male female ratio.

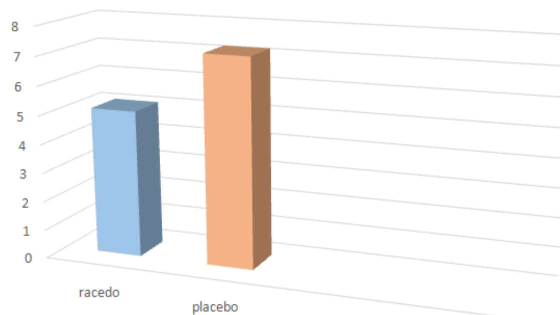

Figure No.2: Mean no. of stools at 48 hrs. for Racedo / Placebo

Above figure is a graphical presentation of effect of Racecadotril Vs Placebo on stool frequency at 48 hours of administration

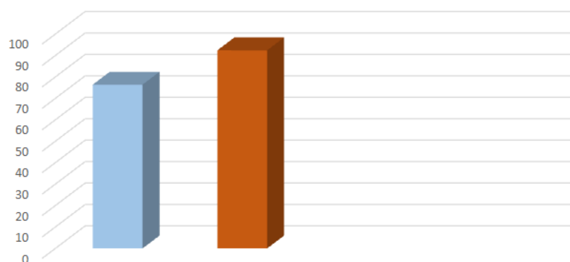

Figure No.3: Mean Hospital Stay after Treatment with Racedo /Placebo

Above figure is a graphical presentation of effect of Racecadotril Vs Placebo on duration of hospital stay after administration of drug/placebo.

Table No.1: Effect of Racecadotril on Frequency of Stools and Length of Hospital Stay: Descriptive Statistics

	No. of patients	Mean value	Std. Deviation
Length of hospital stay	60	76.4000	31.08610
Stool frequency	60	5.10	2.589

Secondary outcome was the duration of hospital stay 'that is lower with Racecadotril. Class in comparison to placebo with mean 76.40 hours /SD 31.08610/P –

value: 0.029. In the placebo group mean duration of hospital stay was 92.400 hours /SD 38.98161.
No adverse effects were noted.

Table No.2: Effect of Placebo on Frequency of Stools and Length of Hospital Stay: Descriptive Statistics

	No. of patients	Mean value	Std. Deviation
Stool frequency	60	7.22	2.835
Length of hospital stay	60	92.4000	38.98161

H0: No association between no. of stools at 48hrs /duration of hospital stay and drug utilized
H1: There is association between no. of stools at 48hrs /duration of hospital stay hospital stay and drug
Chi-Square shows the goodness of fit between the observed values and those expected theoretically. From the analysis of the given data set, the chi square value is greater than p value therefore it leads us to rejection of null hypothesis that is no association between hospital stay and drug.

P-Value (.012) was statistically significant for effect of racecadotril on the frequency of stools.

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.578[a]	12	.012
Likelihood Ratio	29.841	12	.003
Linear-by-Linear Association	15.931	1	.000
N of Valid Cases	120		

P-Value (.029) was statistically significant for effect of racecadotril on the length of hospital stay.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.477[a]	5	.029
Likelihood Ratio	15.269	5	.009
Linear-by-Linear Association	5.921	1	.015
N of Valid Cases	120		

DISCUSSION

This study on children having watery diarrhea is a comparison between Racecadotril and Placebo in reducing stool frequency and consequently hospital stay. Racecadotril not only decreases the severity but also the length of hospital stay.
When a comparison was made between racecadotril and placebo categories, former group hadpromising (P<0.012) decrease in stool output of 48 hours and a promising decrease In the length of hospital stay (p<0.029).
Racecadotril (acetorphan)inhibits enkephalinase so that it dosenot allow splitting of enkephalins which then acts on receptors in gastrointestinal tract thereby decreasing water and electrolytes secretion in intestines with no impact on intestinal motility.[8]
120 patients were enrolled in this study conducted at paediatric unit of MMC Mardan. The criteria of inclusion was passing 3 or greater than 3 unformed stools in a day for less than 14 days.
Individuals with severe dehydration or allergy to racecadotril were excluded. Also patients with comorbid conditions were excluded as they may have had effects on the results of the study
Oral dose of 10 mg for children less than 12 months and 30 mg for those above the age of 12 months was prescribed in TDS. The patient was considered to have improved after passsing formed stools at least twice.
The primary outcome was the reduction in number of stools with the use of racecadotril (mean 5.10) as compared to the placebo group(mean 7.22) and secondary being reduction of hospital stay with a mean 76.4 hrs with racecadotril and 92.4 hrs with placebo.
the results were in accordance with the other studies carried out on the same topic.previous studies show the safety and efficacy of racecadotril in both children and adults.[11]
Other studies conducted on this topic compared the use of racecadotril with zinc and ORS. we conducted this study solely on racecadotril effects to determine its clinical significance. Also other studies lack information on comparison between hospital stay.

CONCLUSION

We have concluded from this study that racecadotril can be effectively used for treating acute gastroenteritis in pediatric population. It decreases stool frequency that will reduce duration of hospital stay.

Author's Contribution:

Concept & Design of Study:	Nafees Khan
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Data Analysis:	Muhammad Fazil, Ammad Ali, Rifayat Ullah Afridi
Revisiting Critically:	Nafees Khan, Muhammad Qasim Khan
Final Approval of version:	Nafees Khan

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Chronic Anal Fissure Management

Comparison of Glyceral Trinitrate (GTN) Paste Application and Lateral Sphincterotomy in Chronic Anal Fissure Management

Rehan Anwar Qureshi[1], Imran Idris Butt[1] and Mian Mansoor[2]

ABSTRACT

Objective: Comparison of Glyceral Trinitrate (GTN) Paste Application and Lateral sphincterotomy in chronic Anal fissure management.

Study Design: Observational and Experimental Study

Place and Duration of Study: This study was conducted at the Departments of Surgery and Medicine, Sialkot Medical College, Sialkot from Jan 2019 to Jan 2020.

Materials and Methods: 108 patients of chronic anal fissure treated with gylceral trinitrate application compare with lateral sphincterormy were included in this study. The history, examination and demographic data was recorded in the designed performa. The informed written consent was priorly taken in every case. The permission of ethical committee was also considered in this study. The data was analyzed for results on SPSS version 10.

Results: The response to GTN paste was maximum in 25-30 age group and minimum at 50-60-year age group. In lateral sphincterotomy response was maximum in 25-30 age group, minimum response was seen in patient group 15-20 year and 50-60 year (table 1). In male response to GTN paste was maximum (51%) whereas in female maximum response was seen with lateral sphincterotomy (64%) (Table 2). Response to GTN paste was maximum in poor and middle class and minimum in upper class, whereas response to lateral sphincterotomy was maximum in poor class and minimum in middle class (Table 3).

Conclusion: It was concluded from the study that Glyceral Trinitrate was also maximum effected in lateral sphincterotomy at the age of 25-30 years.

Key Words: Gylceral trinitrate, lateral Sphincterormy, Chornic Anal Fissure

Citation of article: Qureshi RA, Butt II, Mansoor M. Comparison of Glyceral Trinitrate (GTN) Paste Application and Lateral Sphincterotomy in Chronic Anal Fissure Management. Med Forum 2020;31(6): 44-47.

INTRODUCTION

Anal fissure consists essentially of crack in the skin-lined part of anal canal which often shows poor healing[1]. Chronic anal fissure (CAF) is common perineal condition and well known painful lesion. Ideal surgical treatment even though is not expensive may require long hospital stay and sometimes have problematic complications like anal incontinence. So non surgical treatment for this disease is much needed[2].

Following the recent proof of Gylcerol trinitrate as most important biological mediator of recto anal inhibitory reflex, it has been shown that topical application of nitric oxide donor,such as Glyceryl Trinitrate can lower the sphincter pressure and heal anal fissure. Glyceryl Trinitrate has been shown to be a potent treatment for chronic anal fissure. It decreases anal tone and ultimately heals the anal fissure[1,2]. Glyceryl Trinitrate is a cost effective first line treatment option for the management of chronic anal fissure[3]. Hence the present study is the attempt to know the efficacy of 0.2% Glyceryl Trinitrate ointment versus fissurectomy with lateral internal sphincterotomy and fissurectomy with posterior internal sphincterotomy in the management of chronic anal fissure.

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Received: February, 2020
Accepted: March, 2020
Printed: June, 2020

MATERIALS AND METHODS

One hundred eight patients of chronic anal fissure treated with gylceral trinitrate application compare with lateral sphincterormy were included in this study. The history, examination and demographic data was recorded in the designed performa. The informed written consent was priorly taken in every case. The permission of ethical committee was also considered in this study. The data was analyzed for results on SPSS version 10.

RESULTS

Comparative study of GTN Paste application with lateral sphincterotomy in chronic anal fissure management.

Table No.1:Age Distribution (Response to treatment 108 Patients)

Age	GTN Paste (n33)	Lateral Sphincterotomy (n75)
15-20 Yr.	5 Patients (15%)	8 Patients (10.6%)
20-25 yr.	6 Patients (18%)	10 Patients (13%)
25-30 yr.	10 Patients (30%)	22 Patients (29.3%)
30-40 yr.	6 Patients (18%)	12 Patients (16%)
40-50 yr.	4 Patients (12%)	14 Patients (18.6%)
50-60 Yr.	2 Patients (6%)	8 Patients (10.6%)

The response to GTN paste was maximum in 25-30 age group and minimum at 50-60-year age group. In lateral sphincterotomy response was maximum in 25-30 age group, minimum response was seen in patient group 15-20 year and 50-60 year.

Table No.2:Sex Distribution

	GTN Paste Response	Lateral Sphincterotomy Response
Male 54 Pt.	28 (51%)	26 (29%)
Female 54 Pt.	19 (35%)	35 (64%)

In male response to GTN paste was maximum (51%) whereas in female maximum response was seen with lateral sphincterotomy (64%).

Table No.3: Socioeconomic Distribution

Socioeconomic Sitter	Response to GTN Paste	Response to Lateral Sphincterotomy
Poor Class 52 Pt.	22	30
Middle Class 29 Pt.	22	7
Upper Class 27 Pt.	12	15

Response to GTN paste was maximum in poor and middle class and minimum in upper class, whereas response to lateral sphincterotomy was maximum in poor class and minimum in middle class.

DISCUSSION

Male and female patients were equal in GTN group. There were 54 (50%) male patients and 54 (50%) female patients found in study group. The male: female ratio was 1:1. This is in accordance with study conducted by Schouten[3] Divino[4]. But female patients were found more in study conducted by Christie[5] and Richard[6]. This may be due to the higher incidence of male patients presenting for medical help. This may indicate a large iceberg phenomenon of patients within the population who are not willing to report to surgeon.

Majority of the patients were found in between 20 to 30years of age in all 2 groups. The mean duration of age was 34.14 in two groups. This age group appears to have higher predominance for development of chronic fissure in ano. This is accordance with study conducted by Christie[5], Schouten[3] Divino[4], Lund[7] and Richard[6] where mean age was 35,39,39,44 and 34.7 years respectively. But mean age was 44 and 55 years in study conducted by Palazzo and Schouten[8] respectively. Delay in seeking help and diagnosis is primarily due to the nature of the disease. Lack of knowledge of the disease and availability of the effective treatment is also another important factor responsible for the delay in seeking help and chronicity.

The mean duration of symptoms was found at 4.24 months. This is in accordance with study conducted by Christie[5] and Schouten[3]. This highlights the delayed presentation. The late presentation also associated with a dislike of surgery as a mode of treatment. The idea of anal surgeries being painful is ingrained in the psyche of many patients especially in those of rural background. The demand of such patients for medicinal therapy is natural in such setting.

The presentations of symptoms were found similar in two groups. The sentinel pile was present in 56.6% of patients. Majority of patients 94% had posterior anal fissure, which is the most affected site of fissure in ano. The rare presentation of anterior fissure was noticed in 4% of patients and both in 2% of patients in the study group. This is in accordance with the study conducted by Schouten[3] where posterior anal fissure was found in 85% of patients, anterior in 12% of patients and both in 3% of patients. But in study conducted by Lund[7] the posterior fissure was found in 76% of patients and anterior fissure in 24% of patients. The common posterior fissure is due to less ano dermal flow at the posterior midline compared to other segment of the anal canal.

The indicators used for analysis have been, pain during defecation assessed by visual analogue scale (ranging from 1 to 10, 10 for worst pain experienced by the patient before entering the trial).

Presence of bleeding Per Rectum. This was reported commonly as streaking of blood in formed stool. Frank bleeding Per Rectum was rarely observed.

Side effects—headache, dizziness and flushing in GTN group.

Complications like incontinence of flatus, anal seepage of stool and fecal incontinence that underwent surgery.

These indicators are those that have been found to have association with the disease process and have good association with overall outcome of the disease. Observations were made at 2, 6 and 12 weeks follow up in all three types of treatment. Significant changes in the results in all three types of treatment at these time intervals were observed following initiation of treatment protocol.

With respect to pain control in 25 patients (83%), 29 patients (96.6%) and 30 patients (100%) pain relief were seen at 2, 6 and 12 weeks respectively in lateral sphincterotomy group. Pain relief was in 23 patients (76.6%), 26 patients (86.6%), 29 patients (97%) at 2, 6 and 12 weeks of interval in GTN arm. So pain relief was almost similar in GTN and surgical groups at different interval of time. Freidman test showed significant pain relief in all 3 groups as duration progresses from 2 to 12 weeks. This concides with study conducted by Mishra and co-workers[9]. But Palazzo and co- workers[10] showed pain relief in 33%, 51% and 62% of patients at 2,6 and 12 weeks respectively. This pain relief is due to reduction in the mean anal resting pressure.

Control of bleeding was found in 25 patients (83%), 29 patients (96.6%) and 30 patients (100%) in surgical group at 2, 6 and 12 weeks of duration respectively. Though ‘P’ is significant at 12 weeks, good results were also obtained with GTN group—23 patients (76.6%), 26 patients (86.6%) and 26 patients (86.6%) at 2, 6 and 12 weeks of duration respectively. Freidman test showed significant no bleeding in all all three types as duration progresses. This is again due to reduction in the mean anal resting pressure.

Healing was seen in 20%, 87% and 100% of patients at 2, 6 and 12 weeks in lateral sphincterotomy group respectively. Healing rate was found in 13.3%, 80% and 100% patients at 2, 6 and 12 weeks in posterior sphincterotomy group respectively. However favorable result in the form of complete healing of fissure, were observed in 5 patients (16.7%) at 2 weeks, 16 patients (53.3%) at 6 weeks and 24 patients (86.6%) at 12 weeks in GTN arm. Freidman test showed significant healing of fissure in all 3 groups as duration progresses from 2 to 12 weeks.

Thus lateral sphincterotomy had excellent healing of fissure at 6 and 12 weeks, good chances of healing were also present in treatment with GTN therapy at 12 weeks. This is in accordance with study conducted by Oettle[11] and Mishra[9] where healing rates were 80% and 92.5% respectively. But healing rates were found 43% and 60% in studies conducted by Jonas and co-workers[12] and Evans[13] respectively.

The most important side effect looked in GTN treatment was occurrence of headache. The headache alone has been found to prove the use of GTN for treatment. In our study headache was found in 6 patients (20%). Headache was mild degree and was controlled with using simple paracetamol. No other significant effects like cardiac effects, flushing, and dizziness were observed within study group. Minimum side effects were found in GTN group in study conducted by Oettle[11]. Thisconcides with study conducted by Lund[7] and Bacher et al.[14] However Richard et al[6] in their study showed 80% headache as a side effect in GTN group and 20% of patients were discontinued GTN therapy.

For the patients who underwent surgery the occurrence of incontinence was observed at follow up visits. The assessment was based primarily on history elicited as: Continence to flatus. Anal seepage or soiling of under clothes. Continence to feces on straining.

Out of 30 patients one patient (3.3%) and 2 patients (6.6%) showed flatus incontinence and anal seepage respectively who had undergone lateral sphincterotomy. Four (13.3%) out of 30 patients showed flatus incontinence and analleakage who had treated with posterior sphincterotomy. However, none of the patient who undergone surgery developed the fecal incontinence. Although no significant difference, complications were little at higher level in posterior sphincterotomy compared to lateral sphincterotomy group. Utzig and co-workers[1] in their study showed incontinence of flatus and anal leakage up to 12% of the patients. The studies discussed earlier had longer duration of follow up which might explain the reason for less incidence of incontinence in this series. The absence of recurrence is also attributed to same reason. Libertiny and co-workers[15] in their study showed 3% recurrence at 8 months in LIS group and 15% recurrence at 6 months in GTN group. However dietary modification, intake of high fiber diet and prescriptions of laxative in patients suffering from constipation could also be helpful. Longer follow-ups are required for proper assessment of recurrence.

CONCLUSION

It was concluded from the study that Glyceral Trinitrate was also maximum effected in lateral sphincterotomy at the age of 25-30 years.

Author’s Contribution:

Concept & Design of Study:	Rehan Anwar Qureshi
Drafting:	Imran Idris Butt
Data Analysis:	Mian Mansoor
Revisiting Critically:	Rehan Anwar Qureshi, Imran Idris Butt
Final Approval of version:	Rehan Anwar Qureshi

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Comparative Study of Soft Tissue Infections of Upper Limb in Diabetics and Non Diabetics

Muhammad Qasim Butt[1], Muhammad Abdul Hannan[2], Mehwish[3] and Komal Hussain[4]

ABSTRACT

Objective: Comparative study of Soft tissue infections of upper limb infections in diabetics and non-diabetics.
Study Design: A prospective observational study
Place and Duration of Study: This study was conducted at the Department of Surgery and Orthopedics, Khawaja Muhammad Safdar Medical College, Sialkot and Jinnah Hospital Lahore from January 2016 to December 2018.
Materials and Methods: Ethical review committee permission was sought and informed consent were obtained from patients. All diabetic patients were enrolled through Outpatient Department & Emergency of Surgery and Orthopedics; in group A. Control was made up of nondiabetics with soft tissue upper limb infections due to trauma and were enrolled in Group B. Both groups were randomized for Age, gender, BMI, Duration of diabetes and type of diabetes. Infections were defined as dry, gas, and wet gangrene; necrotizing fasciitis or cellulitis; acute extensive osteomyelitis; involving the hand.
Results: In our study there were 250 patients in Group A (Diabetics with upper limb infections) and Group B (Non-Diabetic with upper limb infections) contained 220 patients. In group A (250) there were 72% (180) female and 28%(70) were male. In group B (220) there were 57%(125) male and 43%(95) female. Highest number of cases in Group A were cellulitis in female followed by wet gangrene of hand and hand abscess, similarly Group B had highest number of cases of cellulitis both in males and females, followed by hand abscess and necrotizing fasciitis.
Conclusion: Higher number of cases in diabetics and severe consequences of soft tissue infections is clearly evident in our study. Therefore, it is recommended that in diabetics even absence of trauma, professional advice from endocrinologist and surgeon should be sought to maintain optimal glycemic control and to avert any limb or life-threatening medical situation.

Key Words: Diabetes Mellitus, Soft tissue infection, Nephropathy, Wet gangrene, Necrotizing fascitis

Citation of article: Butt MQ, Hannan MA, Mehwish, Hussain K. Comparative Study of Soft Tissue Infections of Upper Limb in Diabetics and Non Diabetics. Med Forum 2020;31(6):48-51.

INTRODUCTION

Diabetes is a widely prevalent condition all over the world[1]. There are number of complication attributable to poor glycemic control, including Diabetic nephropathy, vasculopathy, arteriopathy neuropathy; to name a few. There has been extensive research to mitigate adverse consequences of Diabetes Mellitus but few have bornfruits.

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Received: January, 2020
Accepted: March, 2020
Printed: June, 2020

A lot has been accomplished since first case of diabetes to Pancreatic islet transplant but we have stills miles to go before achieving ideal of euglycemia and life without complications of Diabetes and adverse effects of therapies directed at achieving normoglycemia.

The General Surgery caters to more ominous complications of diabetes ranging from Flexor tenosynovitis, Dupuytren's Contracture, trigger finger to soft tissue infections[2]. There is proof that these afflictions more common in patients with DM, may also dependent upon chronicity and poor compliance resulting in microangiopathy[2-5]. With reported burden of disease more than 240 million globally which is projected to cross more than 380 million by 2025, and almost 80% of affected are present in low to middle socioeconomic strata[6]. Pakistan is expected to reach from its 7th position in Diabetic populace to 4th in the world, in few years[7,8]. Soft tissue infections are rare but life or limb threatening and can result in amputation; affecting occupation as well as quality of life. Soft tissue infections of Diabetics with upper limb infections in diabetics range from flexor tenosynovitis, wet gangrene, gas gangrene and osteomyelitis in carpal bones of hand[9-10].

Poor glycemic control, trauma to hand and reluctance to present to healthcare facility are one of the few factors in poor outcomes[10]. Poor glycemic control over a prolonged duration results in glycosylation of collagen, this in turn causes accumulation of collagen as it becomes resistant to collagenases giving rise to architectural change in extracellular matrix and decreased fibroblast viability[11]. A number of studies have been conducted in Europe, Australia and Americas but few have been specific enough to give idea of prevalence of soft tissue infection in diabetics[12,13]. To study frequency of soft tissue infections in diabetic affecting upper limb, especially in low and middle socioeconomic group, a study was needed.

MATERIALS AND METHODS

A prospective observational study was designed at the Department of Surgery and Orthopedics, Khawaja Muhammad Safdar Medical College, Sialkot and Jinnah Hospital Lahore from January 2016 to December 2018. Ethical review committee permission was sought and informed consent were obtained from patients.

All diabetic patients with soft tissue upper limb infection were enrolled through Outpatient Department Emergency of Surgery& Orthopedics; in group A.

Control was made up of nondiabetics with soft tissue upper limb infections due to trauma and were enrolled in Group B.

Both groups were randomized for Age, gender, BMI, Duration of diabetes. Infections were defined as dry, gas, and wet gangrene; necrotizing fasciitis or cellulitis; acute extensive osteomyelitis; involving the upper limb. In total 250 patients in Group A were enrolled and were analyzed against 220 controls. Case definitions were obtained from Bailey and Love text book of Surgery 27th edition. Treatment end points included healing following debridement or minor amputation, major amputation, or death. Data was collected and analyzed via SPSS 16. Comparison between diabetic and control groups was performed using Chi square test for categorical data and t-test for the continuous variables.

Inclusion Criteria: Type 2 Diabetics with soft tissue infection of Diabetics with upper limb infections irrespective of etiology, were included in the study

Exclusion criteria included Type 1 Diabetes, chronic liver disease, hypothyroidism, Factitious diabetes, Cushing's disease, Surgical site infections and history of alcoholism.

RESULTS

In our study there were 250 patients in Group A (Diabetics with upper limb infections) and Group B (Non-Diabetic) contained 220 patients. In group A (250) there were 72% (180) female and 28%(70) were male. In group B (220) there were 57%(125) male and 43%(95) female as shown in Table 1.

The greatest number of patients in group A were in age bracket of 51-60 year both males and females whereas smallest number was in elderly above 70. The group B had similar distribution of highest cases with soft tissue infections in age bracket of 41-50 (50)40% male and (43)45.2%. lowest number of cases in group B were 71 and above Table 2.

Table No.1 Gender Distribution

	Group An 250	Group B n220
Male	70(28%)	125(57%)
Female	180(72%)	95(43%)
Total	250(100%)	220(100%

Table No.2: Age Distribution

Age (yrs)	Group A(n=250)		Group B (n=220)	
	Male n70 (100%)	Female n180 (100%)	Male n125	Female n95
30-40	3 (4.2%)	0	15 (12%)	12 (12.6%)
41-50	2 (2.8%)	5 (2.7%)	50 (40%)	43 (45.2%)
51-60	22 (31.4%)	89 (49.4%)	33 (26.4%)	22 (23.8%)
61-70	35 (50%)	72 (40%)	11 (8.8%)	10 (10.5%)
71-80	7 (10%)	12 (6%)	9 (7.2%)	4 (4.2%)
>80	1 (1.4%)	2 (1.1%)	7 (5.6%)	4 (4.2%)

Table No.3: Comparison of Soft tissue infection of upper limb in Diabetics (Group A) and control / non-diabetics (Group B)

	Group A			Group B		
	Male(n70)	Female(n180)	Total 250	Male (n125)	Female(n95)	Total (220)
Cellulitis	22 (8.8%)	67(26.8%)	89(35.6%)	89(40.4%)	55(25%)	144(65%)
Gas Gangrene	7(2.8%)	15(6%)	22(8.8%)	6(2.7%)	3(1.3%)	9(4%)
Wet gangrene	12(4.8%)	56(22.4%)	68(27.2%)	5(2%)	7(3.1%)	12(5.1%)
Acute Osteomyelitis	6(2.4%)	7(2.8%)	13(5.2%)	1(0.4%)	0	1(0.4%)
Necrotizing fasciitis	12(4.8%)	13(5.2%)	25(10%)	4(1.8%)	17(7%)	21(8.8%)
Abscess	11(4.4%)	22(8.8%)	33(13.2%)	20(9%)	13(5.9%)	33(15%)

Highest number of cases in Group A were cellulitis (26.8%) in female followed by wet gangrene of hand (22.4%) and hand abscess (8.8%), similarly Group B had highest number of cases of cellulitis (65%) both in males and females, followed by hand abscess (8.8%) and necrotizing fasciitis (14.9%) [p- value <0.001] Table 3.

In both groups cellulitis was the most common diagnosis.

DISCUSSION

The number of ominous complications of Diabetics with upper limb infections infection, in our study irrespective of the etiology was proven to be higher in group A. this finding has been supported by numerous other studies[9] and is understandable as clinic-pathologic course of the disease is congruent with poor immunity, humoral response and suboptimal perfusion of extremities [11-12].The number of cases in group B were higher in males as industrial or occupational trauma was common cause of soft tissue infections.

Another important finding in our study was, highest number of diabetics were female and who also developed severe complications of soft tissue infections as compared to males; this was probably due to increased frailty of females and neglect or reluctance of elderly females to present to healthcare facility[13-15]. Lesser number of cases in Group A in both extremes of age distribution is due to near optimal glycemic control and lesser diabetics surviving to >80years in our socioeconomic strata, due to neglect and accumulation of organ damage with prolonged Diabetes mellitus[16-18]. Furthermore, cellulitis was the most common diagnosis in both groups among males and females. Wet gangrene, osteomyelitis and dry gangrene were more common in diabetics as compared to non-diabetics[20].

Hand abscess was the second most common diagnosis in nondiabetics and osteomyelitis was rare and in few extremely neglected cases developed wet gangrene[20,21]. In group B 2nd most common cause of Soft tissue infection in males was abscess whereas in females it was due to necrotizing fasciitis, as necrotizing fasciitis was frequently caused by polymicrobial infection.

Osteomyelitis was uncommon; even in diabetics as mostly patients reported to healthcare facility when infection was limited to soft tissue[19].

There is significant association between diabetes and poorer immunity and higher number of complications especially among females[22]. Any emergency surgical intervention on Diabetics with upper limb infections for soft tissue infection is bound to impair the functionality and quality of life of individuals.[23]

CONCLUSION

Higher number of cases in diabetics and severe consequences of soft tissue infections is clearly evident in our study. Therefore, it is recommended that in diabetics even absence of trauma, professional advice from endocrinologist and surgeon should be sought to maintain optimal glycemic control and to avert any limb or life-threatening medical situation.

As ours is an already burdened healthcare system which is not able to cope with consequences of complicated disease. So early treatment of soft tissue infections and active monitoring with HB_{A1c} levels in diabetics is of utmost importance.

Author's Contribution:

Concept & Design of Study:	Muhammad Qasim Butt
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Role of Duoderm in Bed Sores

Role of Duoderm (Hydrocolloid) Dressings in Bed Sores

Imran Idrees Butt[1], Rehan Anwar Qureshi[1] Munawar Nadeem[1] and Mian Mansoor[2]

ABSTRACT

Objective: To study the role of Duoderm (hydrocolloid) dressings in bed sores study
Study Design: Observational and Experimental Study
Place and Duration of Study: This study was conducted at the Department of Surgery and Medicine, Sialkot Medical College, Sialkot from March 2019 to March, 2020.
Materials and Methods: One hundred patients of bed sore were included in this study to study the role of duoderm (hydrocoIIioid) dressing in this study. Demographic data was recorded in designed proforma. The history and examination was conducted on all the patients. Laboratory investigations for hepatitis C and complete blood examination was also conducted. The informed written consent was priorly taken in every case. The permission of ethical committee was also considered in this study. The data was analyzed for results on SPSS version 10.
Results: The incidence of bed sore was maximum at the age of 50-60 years and minimum at the age of 20-30 year. Response to Duoderm application was maximum in polio patients and minimum in diabetic and spinal injury patients.
Conclusion: Patient Response to Duoderm was quickest in upper class and in middle and lower class was comparatively low.

Key Words: Duoderm (hydrocolloid), dressing, bed sores

Citation of article: Butt II, Qureshi RA, Nadeem M, Mansoor M. Role of Duoderm (Hydrocolloid) Dressings in Bed Sores. Med Forum 2020;31(6):52-55.

INTRODUCTION

The mending of constant injuries assumes control more than about two months, also with the consideration given to the wound[1]; such injuries influence around One percent of the populace (four-five percent more than eighty years)[2] with a visualization of not-recuperating at twenty percent at two years, eight percent at five years and yearly repeat in six - fifteen percent[3].

Mending below a particular ordered grouping, with 3 related & covering stages (fiery, renovating) & includes many different cell & biochemical occasions, with the communication in the phones, the outside the cell grid, & plasma proteins facilitated by cytokines & development sides, in a constant change, & progressive procedure. Its succession, when intruded, advances the inveterate of the wound[4].

Among the interminable injuries with overall significance, one observes the weight breakage of wound (PU), characterized it is a restricted physical issue to the skin as well as basic tissue for the most part over a hard noticeable quality, because of weight, or weight in blend with shear[5]. They influence a great many individuals around the globe at the various degrees of human services, with the grown-up and more seasoned grown-up populace sticking out. In the United States of America (USA), every year, roughly three million individuals create PU. Of these, more than Sixty thousand bite the dust every year because of the entanglements brought about by the injury's existing[6].

Academic predominance & frequency of Pressure ulcer demonstrate disturbing rates. Works attempted in the United States of America show that the commonness changes from ten to sixteen percent in basic situations & from zero to twenty-nine in home consideration; with frequencies from 0.4 to thirty eight percent and from zero to seventeen percent individually[7]. In Brazil, there are, up 'til now, no examinations introducing the national paces of the event of this sore, be that as it may, works attempted in various pieces of the nation show high numbers[8-9].

So as to decrease the disturbing degrees of predominance and rate of PU around the world, universal associations (the UK Pressure Ulcer Advisory Panel (EPUAP); the National Pressure Ulcer Advisory Panel (NPUAP) ; the Agency for Health Care Policy and Research (AHCPR) and the National Institute for Health & medical Excellence (NICE)) have expounded clinical rules coordinated towards the anticipation & medical care of this medical issue. Between the advancements coordinated towards medical care of Pressure Ulcer, the piece of advice[5] demonstrate the

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Received: April, 2020
Accepted: May, 2020
Printed: June, 2020

hydrocolloids as an opportunities for nearby treatment, in light of the grouping & on the attributes of the wound. The hydrocolloids are intuitive bandages, form from an outer layer of polyurethane & an inner sheet of gelatine, gelatin & carboxymethyl cellulose, which give a perfect muggy condition in the injury framework, control the fluid, encourage the self removal of damaged tissue, add to torment the executives & give a hindrance to outside microorganisms[6].

Mix to this, the hydrocolloids keep up a corrosive pH in the injury sheet, which obstructs bacterial development, just as continuing a perfect nearby temperature. These advances angiogenesis, increment the quantity of fibroblasts of the dermis, support the creation of **new connective** tissue and increment the amount of orchestrated collagen, which are all fundamental in the recuperating process[10].

Other than the hydrocolloids, different bandages, for example, hydrogels, polyurethane froths, and hydropolymers, between others, help in the recuperating procedure. Be that as it may, assessment of the proof in regards to the viability of these treatments for better PU recuperating, or with respect to which item is generally proper for each phase of the weight ulcer[11-12] stays rare. Along these lines, the current investigation expected to assess the adequacy of hydrocolloids in the mending of weight ulcers in grown-ups and more seasoned grown-up patients.

MATERIALS AND METHODS

This observational and experimental study was conducted at the Department of Surgery and Medicine, Sialkot Medical College, Sialkot from March 2019 to March, 2020.

One hundred patients of bed sore were included in this study to study the role of duoderm (hydrocoIIioid) dressing in this study. Demographic data was recorded in designed proforma. The history and examination was conducted on all the patients. Laboratory investigations for hepatitis C and complete blood examination was also conducted. The informed written consent was priorly taken in every case. The permission of ethical committee was also considered in this study. The data was analyzed for results on SPSS version 10.

RESULTS

Table No. 1: Incidence of Bed Sorrel According to Age (50 R.)

Age	Bed Sores	Percentage
20-30 Yr.	1 Patients	2%
30-40 yr.	3 Patients	6%
40-50 yr.	5 Patients	10%
50-60 yr.	25 Patients	50%
60-70 yr.	16 Patients	32%

The incidence of bed sore was maximum at the age of 50-60 years and minimum at the age of 20-30 year.

Table No. 2: Response to Duoderm application (duration different causative factor)

Factor	Duoderm	Simple dressing
Diabetic	2 Month (10 Pt.) 20%	3 1/ Month (10 Pt.)
Spinal	2 Month (10pt) 20%	4 Month
Polio	1 Month (Spt) 10%	2 Month
CVA	1 Month (25pt) 50%	2 1/ Month

Response to Duoderm application was maximum in polio patients and minimum in diabetic and spinal injury patients.

Table No.3: Socioeconomic Distribution of Response in Duoderm Dressing

Socioeconomic Distribution	Duoderm Application		Duration
Upper Class	10 Pt.	20%	1 Month
Middle Class	20 Pt.	40%	1 '/ Month
Poor Class	20 Pt.	40%	2 Month

Patient Response to Duoderm was quickest in upper class and in middle and lower class was comparatively low.

DISCUSSION

According to the result "Recuperating", an aggregate of two hundred forty (thirty five percent, n=six hundred seventy one) Pressure Ulcer accomplished absolute decrease of the pressure ulcer (PU). It is imperative that fifty four point five percent (one hundred thirty one) of the Pressure Ulcer (PU) which mended were dealt with utilizing a substance which forms a gel in the presence of water bandages.

In study E one hundred sixty nine - Hollisaz; Khedmat; Yari[13] it was seen that the substance which forms a gel in the presence of water was increasingly powerful when contrasted & cotton & tape ($p<0.005$) & with topical synthetic compound related to hydantoin ($p<0.01$).

In a methodical audit of twenty nine medical preliminaries, it was conceivable to watch the prevalence of a substance which forms a gel in the presence of water in connection over bandage, according to the quantity of recuperated pressure ulcer (PU) and to the decrease of the injury's measurable. Other studies got comparable outcomes, in spite of the fact that without a measurably huge contrast between the bandages examined.

It lyies apart that a substance which forms a gel in the presence of water were additionally better than the straightforward bandage in the medical care of different kinds of injuries, aside from pressure ulcer (PU), with a seventy six percent chance of getting satisfactory mending, in spite of the fact that in the absence of a critical contrast.

Contrasted and proteolytic enzymes that decompose collagen and gelatin (E554 - Burgos et aI)[14], the quantity of an open sore which mended was comparable

between the two gatherings. One imminent arrangement investigation underlined a different outcome in confirming that proteolytic enzymes that decompose collagen and gelatin was more viable than treatment with hydrocolloids in PU situated on the heels. Of the aggregate of twelve subjects who got proteolytic enzymes that decompose collagen and gelatin, eleven (91.7%) made progress in the medical care, contrasted and 7(63.6%) in the a substance which forms a gel in the presence of water gathering (p<0.005).

In the meta-examination of the investigations E284 - Seeley; Jensen; Hutcherson[15], E312 - Bale et al[16], E314 - Thomas et al[17] and E423 - Banks; Bale; Harding[18], in which a substance which forms a gel in the presence of water bandages were contrasted and froths (pandemic, polímero hidrogenado & a synthetic resin), there was no measurably noteworthy distinction in the quantity of pressure ulcer which mended (p=0.84; OR 1.06, CI 95% 0.61-1.86).

Nonetheless, when examination was attempted distinctly with the synthetic resin froth (E423 - Banks; Bale; Harding[18] and E312 - Bale et al[16], in spite of the fact that the predominance of the synthetic resin bandage was not confirm in mending (p=0.32; OR 1.57, CI 95% 0.64-3.85), the meta-investigation uncovered an expansion in the odds of the event of the results contemplated. A medical care preliminary which looked at the viability of a substance which forms a gel in the presence of water and a synthetic resin froth showed that there was no distinction in the adequacy of the two kinds of bandage when they were utilized in medical care of pressure ulcer. An efficient audit in regards to froth bandages in the medical care of the diabetic foot likewise neglected to introduce a distinction in the quantity of healings when contrasted and a substance which forms a gel in water in the presence of water.

Conversely, one efficient review which looked at different bandages, for example, froths, found out that the hydrocolloids were less viable in regards to the quantity of injuries which mended the recuperating time and the decrease of the territory. A comparative outcome was discovered for the medical care of other ceaseless injuries. In a medical care preliminary with one hundred patients with venous open sores, a huge predominance (p<0.05) of pandemic froth was seen according to the a substance which forms a gel in water in the presence of water in the quantity of open sores which healed.

It lies apart that the gathering of the investigations in the self-referential -examination was undermined by the branching in the intercessions contemplated and in the estimating of the results. In one precise audit on the utilization of extraordinary bandage in medical care pressure ulcer, the creators referenced that the combined investigation of the seventy-seven examinations was upset by, between different causes, the abberations in the results methodically.

When contrasted and other extraordinary bandages, for example, main structural protein found in skin (E627 Graumlich et al[19], measurably noteworthy contrasts were not seen in the recuperating statistics. The amino corrosive copolymer (E348 - Hondé; Derks; Tudor)[20] was more powerful than the a substance which forms a gel in water in the presence of water bandage(p=0.089). A methodical audit of bandages for venous open sores didn't locate a noteworthy distinction between the substance which forms a gel in the presence of water & main structural protein found in skin in the mending of the injuries. Another examination referenced that there was no confirmation of the adequacy of a substance which forms a gel in the presence of water comparable to different bandages in the medical care of diabetic foot open sores. So also, an efficient audit inferred that the proof is deficient to think about a specific unique bandage, among these a substance which forms a gel in the presence of water, better than the others. The investigations portrayed above show results like those provide in this examination, regardless of whether for pressure ulcer or other constant injuries.

In the correlation between a substance which forms a gel in the presence of water in various forms, study E346 - Day et al[21] prove the predominance of the triangle-molded bandage in recuperating (p=0.017) of sacral pressure ulcer in examination with the oval a substance which forms a gel in the presence of water. A comparative outcome was discovered by other authors. This distinction might be connected legitimately to the form, given that the trouble in adjusting bandages in the sacral locale can bargain and decrease their predominance. In this manner, the triangular a substance which forms a gel in the presence of water bandage is satisfactory adjusted to the district and, thus, presents better outcomes in recuperating.

CONCLUSION

Patient Response to Duoderm was quickest in upper class and in middle and lower class was comparatively low.

Author's Contribution:

Concept & Design of Study:	Imran Idrees Butt
Drafting:	Rehan Anwar Qureshi
Data Analysis:	Munawar Nadeem, Mian Mansoor
Revisiting Critically:	Imran Idrees Butt, Rehan Anwar Qureshi
Final Approval of version:	Imran Idrees Butt

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Unmet Need of Contraception

Abdul Rahman[1], Muhammad Akram Saeed[1] and Nasreen Hamid[2]

ABSTRACT

Objective: This study was disbursed to spot the unmet need of contraceptive method and to assess the factors influencing it in Sakrand city, Sindh.

Study Design: Cross sectional study.

Place and Study Duration of Study: This study was conducted at the Department of Public Health Services Academy, Islamabad, Community Medicine and Obstet & Gynae Department, Sialkot Medical College Sialkot from April 1st, 2018 to 30th April, 2018.

Materials and Methods: 194 respondents were approached for interviewing after verbal consent. These respondents were designated through Convenience Sampling. The sample size involves ninety-seven for every (Married Men & Women), was required for the present study. A structured form was accustomed to gather data from 194 married couples. Data was entered and analyzed exploitation SPSS-20.

Results: 38.14% of men (37 out of 97) were found to own associate unmet need for contraceptive method, while 42.26% of female (41 out of 97) were found to own associate unmet need for contraceptive method. On the premise of findings of study, it had been found that married couples in city Sakrand had higher unmet need for contraceptive method.

Conclusion: The study found married men of city Sakrand were facing totally different barriers within the seizing of contraceptive method i.e. at community level e.g. lack of education and awareness, excessive work, family pressure.

Key Words: Contraceptive Method, Contraceptive Prevalence Rate, Married Couples

Citation of article: Rahman A, Saeed MA, Hamid N. Unmet Need of Contraception. Med Forum 2020;31(6):56-59.

INTRODUCTION

The recent knowledge on unmet need reveals that the services associated programs fail to fulfill the demand and leave an unmet need high[1]. As family size wants cut back, unmet need tends to develop till service facility catches up with the demand for fewer births and longer birth intervals. After that additional gains in commission convenience consecutively decrease unmet need[2]. According to World Health Organization, encouragement of contraceptive method and enabling girls to avoid unwanted pregnancies is key. World Health Organization's care in humanizing motherly health in achieving the Millennium Development Goal[3].

Birth control and generative health programs have contributed seriously to fertility decline within the developing contries[4].

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Received: January, 2020
Accepted: February, 2020
Printed: June, 2020

The use of in contraceptive method contributes to dropping the load of generative health problem by declining mortality and morbidity of reserve pregnancies. Ever-increasing recent family planning use needs the population's intensive comprehensive interventions and mutual demand of serious info. At the similar time importance has been set on the interventions aiming at countering negative perceptions of recent contraceptive ways[5].The population policy of Pakistan envisages achieving population stabilization in 2020 by declining the annual rate of growth from one.9% to 1.3% and TFR at 2.1. This mark needs exhausting diligence to create the perception of little family a usual surroundings through a keenly planned statement and education promotion. On immediate determinants of fertility largely infant feeding and prolonging birth area won't create conflict from the community as a result of these ideas area unit in accordance with Moslem injunctions and data[6]. The vital importance of generative rights to the contradiction of population policies within the twenty first century argued that generative rights prolong to be beneath risk, even some fifteen years once the milestone ICPD in Cairo declared the importance of a satisfying and sex activity life, the potential to own youngsters and therefore the right to decide on on the temporal order, range and spacing. This is often contrasted with the unmet want for birth control within the poorest countries. It entails health suppliers to promoter for generative rights, affirming that the

autonomy of girls to arrange their fertility is that the origin for different necessary decisions[7].

The health edges of contraceptive method area unit as: around two hundred,000 maternal morbidities take up to 0.5 the full may be prevented through effective birth control and literature is clear that eleven girls die on a daily basis from gestation and birth complications thus most of those deaths can even be prevented by contraceptive method. Correct birth spacing reduces by 0.5 the chance of death for newborns and infants. Over seven,800 baby deaths may be prevented yearly through contraceptive method. Poor girls and infants carry the foremost risk of death and incapacity from lack of access to generative health services, thus contraceptive method may be a cost-efficient public health live. Unmet need as a thought dates to the Sixties, once researchers 1st incontestable a spot within the developing world between women's fertility preferences and their use of contraceptive method. New views on men have emerged from associate evolution in puzzling over generative health with ICPD programme of action birth down a holistic conception of generative health[8].

An Indian study disclosed that unmet want for contraceptive method was St Martin's Day for married men and seventeen.5% for married girls. The distinction was seen each in unmet want for spacing (M-3.5% vs. F-6%) similarly as limiting family size (M-7.5% vs. W-11.5%). Overall, unmet want for contraceptive method was considerably higher for married girls compared to married men[9].

Unmet need for contraceptive method is especially high in Sub-Saharan Africa, wherever very little progress has been created. Inside each region, however, some countries and sub regions stand out as clear targets for help. Though African nation, South Africa and plenty of their immediate neighbors have unmet want levels below 2 hundredth, Ethiopia, other countries on the east and west coasts of continent have rates around thirty fifth. Different regions, too, have their hassle spots: The rates for Asian nation (30%) and Haiti (40%), as an example, area unit sixfold rock bottom measured rates in their region; Vietnam (5%) and South American nation (6%) severally associate calculable 113.6 million girls within the developing world have associate unmet want for contraceptive method one zero five.2 million married girls (of whom fifty five.4 million would like to area births and four9.8 million would like to limit additional childbearing) 4 million unwedded girls. Additionally, associate calculable 9 mil lion girls in different regions have associate unmet need: four.6 million in Russia, 3.6 million in Japanese Europe. Thus, a complete of 122.7 million girls in developing countries and therefore the former Soviet republics have associate unmet need for contraceptive method. Asia contains sixty one million married girls with unmet want, or fifty eight of the full for the developing world, reflective the inclusion of many countries with terribly giant populations (India, Indonesia, Pakistan and Bangladesh). Sub-Saharan Africa contains twenty four million (22% of the total), largely owing to the massive populations of African nation, Ethiopia, South Africa and therefore the Democratic Republic of the Congo. Geographic area contributes eleven million married girls with unmet want (11%), nearly 1/2 whom board Mexico and Brazil. North Africa and therefore the Mideast account for under concerning eight million (8%), and therefore the Central Asian republics, with their smaller populations, have a complete of one.1 million (1%).The proportion of presently married girls with unmet want in varied regions of the developing world in 2000 ranges from St Martin's Day to pure gold. sub-Saharan Africa's figure of pure gold is concerning 0.5 once more the common for the developing world overall (17%); different regional figures vary from St Martin's Day within the Central Asian republics to 14 July in geographic area and Sixteen Personality Factor Questionnaire in North Africa and therefore the Mideast and in Asia[10]. At an equivalent time, it's evident that reducing unmet have to be compelled to zero or negligible levels is feasible and nearly assured wherever contraceptive prevalence is high, e.g., Vietnam with five-hitter and country with 11th of September. This indicator is one by that MDG 5b's progress is being monitored, and nil tolerance for unmet contraceptive want deserves thought for adoption by all countries absolutely committed to rising the human condition[11].

The unmet want live offers associate estimate of the proportion of girls UN agency may probably use contraceptive method. UN agency area unit exploitation contraceptives area unit aforementioned to own met want for birth control. The full demand for birth control is formed of the proportion of married girls with unmet want and married girls with met want for birth control[12].

MATERIALS AND METHODS

A Cross sectional study was conducted from April 1st, 2018 to 30th April, 2018 at the Department of Public Health Services Academy, Islamabad, Community Medicine and Obstet & Gynae Department, Sialkot Medical College Sialkot. This study was conducted to spot the unmet need of contraceptive method and to assess the factors influencing it in married couples of Sakrand city, Sindh. The sample size involves ninety seven for every (Married Men & Women), was required for the present study. A complete of 194 respondents were approached for interviewing after verbal consent & these respondents were designated through Convenience Sampling with inclusion criteria as Married Men & Women; (15 to forty nine for married girls & fifteen to seventy

years). Collected data was entered and analyzed exploitation SPSS-20.

RESULTS

Unmet Need of Contraception: 38.14% of men (37 out of 97) were found to have an unmet need for contraception, while 42.26% of women (41 out of 97) were found to have an unmet need for contraception.

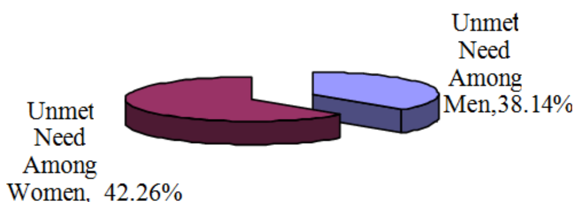

Figure No.1: Unmet Need among married men and women.

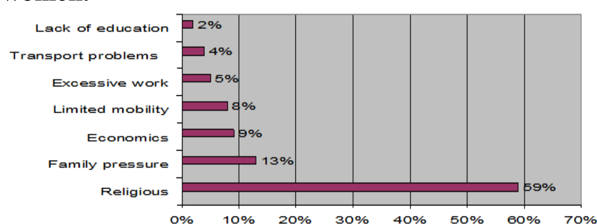

Figure No.2: Reason of Unmet need among women.

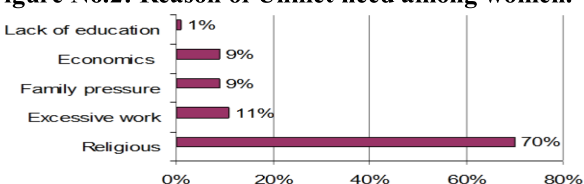

Figure No.3: Unmet need for contraception.

DISCUSSION

In the current study; unmet want for contraceptive method was found to be higher for married girls compared to men (42.26% & 38.14% respectively) among study respondents. International & regional literature shows regional figures of total Unmet need as: 1990-2009 West and Central Africa twenty five.5, East and Southern Africa twenty six.5, Middle East / North Africa thirteen.5, Eastern Europe eleven.3, South Asia twenty one.0, East Asia/Pacific sixteen.6, Latin America and Caribbean seventeen.425.

Although African nation, South Africa and plenty of their immediate neighbors have unmet want levels below 2 hundredth, Ethiopia, African nation and other countries on the east and west coasts of continent have rates around thirty fifth. different regions, too, have their hassle spots: The rates for Asian nation (30%) and Haiti (40%), as an example, area unit sixfold rock bottom measured rates in their region Vietnam (5%) and South American nation (6%), respectively[12].

In line with a supply that identifies that the unmet need for contraceptive method remains persistently high in many countries wherever one fifth or a lot of married reproductive-aged non-contracepting girls report desirous to area or limit births e.g., Myanmar (20%), Laos (40%), Asian nation (25%) and Asian nation (24%). These 5 countries alone account for nearly twenty million girls with unmet want and an other eight with accessible knowledge (e.g., Indonesia, Philippines, Vietnam, Bangladesh, India, Kazakhstan, and Mongolia) contribute a further fifty eight.3 million girls.

Unmet need varies wide similarly, wherever knowledge area unit accessible. Pakistan, Laos and therefore the Maldives register a number of the best levels of unmet want (33%, 40%, and thirty seventh respectively) within the region and area unit substantial for Asian nation (24%), Asian nation (25%), Myanmar (20%), the Philippines (17%), PDR Korea (16%) and Mongolia (14%). These levels occur among married men & girls, wherever the ladies isn't contracepting however wishes to area or limit future births and imply continuing vulnerability to the chance of haphazard gestation till the necessity is met. Globally this figure is calculable to be 215 million girls, with a predominant share being within the Asia region, and therefore the incidence of uncaused pregnancies annually is calculable at seventy five million. At an equivalent time, it's evident that reducing unmet have to be compelled to zero or negligible levels is feasible and nearly assured wherever contraceptive prevalence is high, e.g., Vietnam with five-hitter and country with 11th of September. This indicator is one by that MDG 5b's progress is being monitored, and nil tolerance for unmet contraceptive want deserves thought for adoption by all countries absolutely committed to rising the human condition[11]

In my study reasons known for higher rates of unmet want in Sakrand city were e.g. lack of education, excessive domestic work and resistance from the female parent, resistance from husband, relative-in-law and elders.

Regarding reasons of unmet wants of contraceptive method there's coherence thus of these barriers ought to be self-addressed at the same time and fruitfull efforts created to cut back unmet have to be compelled to zero or negligible levels as literature is clear Vietnam.

Similar results were rumored in an exceedingly study from urban center, twenty ninth of men compared to thirty ninth of girls rumored having unmet need for contraceptive method. None of the previous studies have looked between married men and married girls on the unmet want for contraception[12]

The findings of our study have highlighted the numerous distinction in married men and married girls; unmet want of contraceptive method and reinforce the actual fact that responses of married girls alone might not be enough; this is often why my study has target each genders to assess the unmet need of

contraceptive method in terms of frequency similarly as totally different reasons one by one among married men and married women as serious issue.

CONCLUSION

The study found married men and ladies of city Sakrand were facing totally different barriers within the seizing of contraceptive method. Largely the barriers were at community level like lack of education and awareness, excessive work, resistance from family. Religious barriers were the foremost common among all.

Sakrand city includes a high unmet want of contraceptive method and low contraceptive prevalence rate. Though there's smart data relating to family and trendy ways of contraceptive method but there's low utilization of recent contraceptive ways.

Author's Contribution:

Concept & Design of Study:	Abdul Rahman
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

Umbilical Cord Separation

Comparison Between Alcohol Application Versus Dry Cord Care

Iftikhar Ahmed[1], Saba Haider Tarar[1], Madieha Tariq[1] and Waseem Ahmed Khan[2]

ABSTRACT

Objective: To compare Alcohol with dry umbilical cord care in terms of mean umbilical cord separation time in neonatal period at Divisional headquarters teaching hospital, Mirpur, Azad Kashmir.

Study Design: A Randomized control trial study.

Place and Duration of Study: This study was conducted at the Neonatal Unit Divisional Headquarters Teaching Institute, Mirpur, Azad Kashmir from June,2019 to February, 2020.

Materials and Methods: After taking permission from Ethics Committee of our institute, data was collected on a pre-designed Performa with a well informed consent was taken from the mothers along with the demographic details. About 100 Neonates who were admitted in well baby NICU for minor problems were included in this study. Two groups were formed and each neonate was allotted group randomly. One group received Alcohol, (Methylated spirit: isopropyl alcohol 70%) while other group received general instructions to keep the cord clean, dry and well exposed. The cord separation time was noted in terms of days of life at which the cord was shed.

Results: The mean age of neonates in Alcohol group was 2.50 - 2.29days and in dry cord was 2.78 -2.06 days. In Alcohol group there were 30(60%) male and 20(40%) female babies and in dry cord care babies, we had 26(52%) male babies and 24(48%) female babies. We found that the mean time for separation of cord in Alcohol group was 7.42- 0.54 days and in dry cord care group was 9.62 - 0.64 days. However, time for separation of umbilical cord in Alcohol group was less as well as statistically significant, p-value < 0.001.

Conclusion: Application of Alcohol, (Methylated spirit: isopropyl alcohol 70%) is superior to dry cord care in term of less cord separation time of umbilical cord.

Key Words: Neonates, Alcohol, Umbilical Cord, Kashmir

Citation of article: Ahmed I, Tarar SH, Tariq M, Khan WA. Comparison Between Alcohol Application Versus Dry Cord Care. Med Forum 2020;31(6):60-62.

INTRODUCTION

Neonates, after birth have to come across, one of the major physiological transformation during the transition phase of fetal to neonatal period. The neonate is separated from placenta as the cord (UC) is cut, then the care of the remaining UC stump is necessary till it's shedding which takes around two weeks after birth. [1]The remaining umbilical stump is a readily accessible port of entry for systemic infection in the neonate. In addition, the neonate lacks protective physiological immediately after birth. Normal skin flora gradually begins to be acquired after first day of life. The umbilicus can be infected by bacteria from environmental sources such as the mother's vagina and the hands of attendants. Detachment of the UC stump is carried out, by active inflammation at junction of the abdominal wall and Umbilical cord with infiltration of leucocyte and subsequently complete resolution of UC. The cord generally falls off between 5 to 14 post natal days. Factors affecting this process are the application of antiseptics to the stump, infection and caesarean section.[2]

Omphalitis is inflammation of UC usually by infection, which can lead to fatal diseases in newborn, such as neonatal sepsis, neonatal tetanus. The incidence of omphalitis and sepsis has decreased with umbilical cord care in advanced countries omphalitis is still a significant cause of neonatal mortality in these areas. Some studies have revealed, two-thirds of all deliveries in low-income countries are carried out without compliance with standard hygienic guidelines. These childbirths are usually carried out at homes by midwives, and UC care is done by using unsterilized materials.[3] These substandard conditions lead to infection of the umbilical cord with pathogenic bacteria such as *Staphylococcus aureus*. Thus, aseptic care of the UC, till its final detachment, is important to halt infections such as omphalitis, neonatal sepsis and tetanus. Multiple antiseptics like alcohol, triple dye, chlorhexidine and salicylic sugar powder are applied for UC care. There is lack of consensus about which antiseptic is most effective and efficient.[4]

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Received: March, 2020
Accepted: April, 2020
Printed: June, 2020

The advanced countries, with good hygienic healthcare conditions and standard peri-natal care, UC infections like omphalitis has very low incidence. Two studies of meta-analyses suggested that there is no benefit of any medication in preventing omphalitis.[5] The dry UC care method that is to "keep cord dry and clean " using a simple soap and water is the current recommendation of World Health Organization and may be more effective and practical like different expensive antiseptics. According to their view, dry care would be readily available as well as cheap for healthy babies in hospital settings in advanced care countries.[6]

MATERIALS AND METHODS

Our study was carried out in well baby unit of NICU in Divisional Headquarters teaching hospital, Mirpur, Azad Kashmir. Data was taken after taking permission from Ethical Committee and taking consent from the mothers along with demographic details. About 100 Neonates who were admitted in well baby NICU for minor problems from 1st June, 2019 to 29th Feb, 2020 were included in this study. Only well babies and full term were included and Sick neonates were not included in the study. We calculated the Sample size by using WHO calculator. Non-probability consecutive sampling was used for sampling. Two groups were formed and each neonate was allotted group randomly. One group received Alcohol, (Methylated spirit: isopropyl alcohol 70%) while other group received general instructions to keep the cord clean and dry. The cord separation time was noted in terms of days of life at which the cord was shed. Data was analyzed by using SPSS version 20.

RESULTS

The mean age of neonates in Alcohol group was 2.50-2.29 days and 2.78 2.06 days in dry cord group. In Alcohol group there were 30(60%) male and 20(40%) female babies and in dry cord care babies, we had 26(52%) male and 24(48%) female babies. Our mean time for separation of cord in Alcohol group was 7.42 - 0.54 days and in dry cord care group was 9.62 0.64 days.

Table No.1: Mean Comparison of Time of Separation for cord in both study groups with respect to gender:

Time of separation for cord	**Mean**	**S.D**	**Min.**	**Max.**
Alcohol cord care	7.42	0.54	6.00	8.00
Dry cord care	9.62	0.64	9.00	12.00
Total	8.52	1.25	6.00	12.00

Table No.2: Mean Comparison of Time of Separation for cord in both study groups with respect to age group (days):

Age Group	Study Groups	Mean	S.D	t- test	P – value
0-3 days	Alcohol cord care	4.7	0.56	-15.042	<0.001
	Dry cord care	9.69	0.68		
4-7 days	Alcohol cord care	7.29	0.47	-11.879	<0.001
	Dry cord care	9.47	0.52		

In our study, mean time for separation of UC in Alcohol group was less as well as statistically significant, p-value < 0.001. In male neonates, the mean time for separation of cord in Alcohol group was statistically lower (7.33 -0.55 days) as compared to dry cord care group (9.65 0.69 days), p – value <0.001. Similarly, in female neonates, the mean time for separation of cord in Alcohol group (7.55 0.51 days) as compared to 9.58 0.58 days, p – value < 0.001.

DISCUSSION

The umbilical cord (UC) is an important place for infectious colonization and the commonest route of entry for tetanus neonatorum. Mothers found a lot of difficulties in keeping the cord clean with dry cord care method and it was found that application of alcohol on UC enhances cord separation. The mean age in Alcohol group was 2.50 - 2.29days and 2.78 2.06 days in dry cord group in our study. In Alcohol group there were 30(60%) male and 20(40%) female babies and in dry cord care babies, we had 26(52%) male and 24(48%) female babies. Our mean time for separation of cord in Alcohol group was 7.42- 0.54 days and in dry cord care group was 9.62 0.64 days. Similar results were depicted in a study done by Maira Z etal. Who, enrolled total 70 neonates in a study. According to their statistics, Cord separation in alcohol group was 7.03±1.2 days and in dry UC group was 9.29±1 day and was statistically significant; (p-<0.001).Out of them 39 (55.7%) were male with male to female ratio 1.2:1.[7]

In a study done in Iran, where two groups had comparison between dry cord care and 70% Alcohol. In the dry UC care group, neonates had a significant infection with GBS (58.3% vs. 35% p=0.042), Staph. epidermidis (86.7% vs. 61% p=0.020) and E coli (88.9% vs. 67.5% p=0.025). In other group, there were no such infections. So, even there was no significant correlation between CST of UC but bacterial infection was higher in dry cord care neonates. So, studies show

a definitive risk of the umbilical cord stump infection if antiseptics are not applied.[8]

In contrast to our study, a meta-analysis reviewed of 13 studies including 4967 neonates, 50.35% female newborns reviewing six RCTs as well. According to that, application of Alcohol was comparatively associated with longer CST (MD = 1.93 days, 95% CI: 0.80, 3.06) while they did not found any risk of omphalitis. But, dry cord care was associated with foul smell at the surrounding tissues and increased risk of infection like E-coli colonization. According to that research, dry cord care is an easy as well as effective way to hasten CST but increased infection, particularly in low income countries.[1]

In our study, the mean time for separation of cord in Alcohol group was less and statistically significant, p-value < 0.001. In male neonates, the mean time for separation of cord in Alcohol group was statistically lower (7.33- 0.55 days) as compared to dry cord care group (9.65 0.69 days), p – value <0.001. In female neonates, the mean time for separation of cord in Alcohol group (7.55 - 0.51 days) as compared to 9.58-0.58 days, p – value < 0.001 in dry cord group. Gathwala et al. Compared dry cord versus chlorhexidine application. A statistically significant difference was found in both groups in terms of CST as well as incidence of culture-positive sepsis although there was not any difference noted among the groups as far as umbilical infection, neonatal sepsis and meningitis were concerned. So, according to them Chlorhexidine was useful for umbilical cord care as it prevents infections in neonates in neonatal units.[9]

CONCLUSION

Application of Alcohol, (Methylated spirit: isopropyl alcohol 70%) is superior to dry cord care in term of early umbilical cord separation. It is cheap, readily available, easy to apply, time saving method which not only hastens cord separation time but also prevents secondary infections of UC.

Author's Contribution:

Concept & Design of Study:	Iftikhar Ahmed
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Data Analysis:	Madieha Tariq, Waseem Ahmed Khan
Revisiting Critically:	Iftikhar Ahmed, Saba Haider Tarar
Final Approval of version:	Iftikhar Ahmed

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Original Article

RV Perforation in Permanent Pacemakers

Right Ventricle Perforation in Permanent Pacemakers Implantation

Bakhtawar Shah[1], Shahab Saidullah[2], Muhammad Fareed Khan[3], Mehboob ur Rehman[2], Nisar Ahmed[3] and Saeed Ahmed[4]

ABSTRACT

Objective: To study the right ventricle perforation in permanent pacemakers implantation.
Study Design: Retrospectively study
Place and Duration of Study: This study was conducted at the Department of Cardiology, Hayat Abad Medical Complex, Peshawar and PIMS, Islamabad from 2010 to March 2018.
Materials and Methods: According to the protocol of our center, we maintain patients' records of follow up clinic from 2nd post-operation day and then at six months to one year, interval or more frequently if they are having any symptoms. It includes patient's symptoms, pacemaker site examination, baseline ECG at arrival and patient device parameters observed on device programmer. Patients are advised echocardiography, x-ray chest postero-anterior view and lateral view and examined under fluoroscopy if there is any suspicion of complication. Data so obtained was analyzed for the frequency of lead perforation using SPSS version 22.
Results: Total 1670 different implantable devices record was examined during the study period. There were 535 dual chamber pacemakers, 1030 single chambers pacemakers, CRTP, CRTD and AICD were 45, 10 and 49 respectively. We found only one case of RV lead perforation in a dual chamber pacemaker.
Conclusion: Lead perforation in permanent pacemakers is a dreaded complication which can be best prevented by not allowing any tension on lead when it is position in the right ventricle.
Key Words: Right ventricle wall perforation, permanent pacemaker (PPM), tine lead, screwing lead, right ventricle out flow tract (RVOT).

Citation of article: Shah B, Saidullah S, Khan MF, Rehman M, Ahmed N, Ahmed S. Right Ventricle Perforation in Permanent Pacemakers Implantation. Med Forum 2020;31(6):63-67.

INTRODUCTION

As the average life expectancy increases globally[1] on one hand, and there is stat of the art management for congenital heart diseases[2] on the other hand, both these have increased the number of adult population living with heart diseases many fold around the world.[3] It not only increased the burden of outdoor cardiology patients but also burden on interventional cardiology and electrophysiology. Cardiac devices, which are the integral part of both cardiology and electrophysiology today, also increased enormously.[4] There is a new epidemic in the implantation rate of cardiac pacemakers[5], automated implantable cardiovertor defibrillators (AICD)[6], and cardiac resynchronization devices (CRT)[7] implantation. The increased rate of implantation also increased the rate of devices related complications.[8] Lead perforation is one of the dreaded complications which can endanger the life of the patients[9] beside the increased financial cost and burden on cardiac institution.[10] Though the incidence of perforation has been on the decline as the leads have become more flexible, less stiff and thinner but still it pop up in the daily practice.[11] The presenting symptoms are chest pain, dyspnoea, Syncope, abdominal pain, muscle or diaphragm stimulation and hiccups.[12] Pericardial effusion may leads to Cardiac tamponade causing hypotension, shock or even cardiac arrest, and may require surgical assistance[9] beside as emergency in the pacing department. Apart from symptomatic perforation, the rate of unrecognized and asymptomatic perforations is much higher and in some studies the incidence reaches up to 15%.[13] There is loss of capture and sensing despite the fact that the impedance of the lead is normal.[12] Pacemaker system interrogation on device programmer, echocardiography,[14] chest radiography[14] and computed tomography (CT)[15] scanning can be very helpful to either prove or rule out this complication. Once the complication is diagnosed then, there is no alternative other than to reposition the lead. But the difficulty of explanting the device and repositioning the lead will depend on the duration since implantation [12]. More the time since implantation, difficult will be the explanation due to fibrosis and adhesion[12] both inside and outside the heart. At the time

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Received: January, 2020
Accepted: February, 2020
Printed: June, 2020

of lead extraction, the procedure may be complicated by tamponade, and will need urgent pericardiosentesis[16] or surgery[12] to sealing the puncture site of the heart. So at the time of explanation the cardiac surgical suit needs to be informed. However, if the patient is totally asymptomatic and the device sensing and capture properties are intact then perforation is an accidental finding. The right heart which is a low-pressure system, a perforation may be sealed by a combination of muscle and fibrosis over the lead, resulting in no sequelae. Appropriate management of asymptomatic lead perforation is a debated issue. Some studies suggest that the diagnosis of lead perforation necessitates lead removal [17]. Results of other studies[16], however, suggest that the extraction of a chronically perforated lead without malfunctioning of the device is not mandatory. In addition, the risk of cardiac tamponade should be weighted after the removal of chronically implanted leads with asymptomatic perforation against the fact that a significant number of those leads which are asymptomatic and partially perforated may present with symptoms later on.[18]

Any complication can only be prevented if the cause of that complication is certainly known. But unfortunately, the exact mechanism of lead perforation is not known but different factors have been listed in the literature for lead perforation. These include: factors related to the patient, device, procedure, underlying pathology in the heart and the use of some medication by the patients at the time or after implantation. Therefore, the ratio of this cumbersome complication can be enormously reduced if these factors are address during the procedure. In this study, we are going to share our own experience in the field of implantation and the rate of lead perforation in the last one decade in our procedure.

MATERIALS AND METHODS

The record of all those patients from our pacemakers follow up clinic, who were implanted permanent pacemakers, was analyzed retrospectively for lead perforation. Patients were examined on the 2nd post operative day or after the procedure and then at six months to one year, interval or at any time if the patient was symptomatic. At each visit a brief history of any symptoms was recorded. Pacemakers' implantation site was examined at each visit and twelve lead ECG advised. Patients' device was analyzed on programmer for battery life, Impedance, threshold, atrial sensing and P wave amplitude. V sensing and R wave amplitude was also recorded if not fully dependent. Atrio-ventricular (AV) delay adjusted for possible maximum ventricular intrinsic rhythm sensing but not at the cost of hemodynamic compromised. Patients who were symptomatic were further subjected to X-Ray chest posterio-anterior and lateral view and if needed examined under fluoroscopy. All data so collected was analyzed on SPSS version 22 for frequency of perforation.

RESULTS

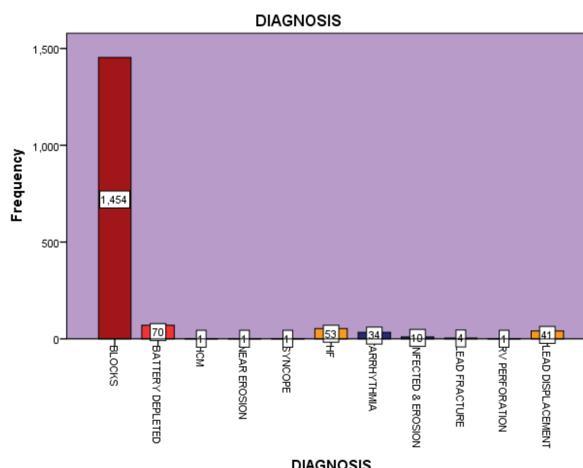


Figure No.1: Diagnosis of patient at time of presentation

Table No. 1: Demographic data of patients

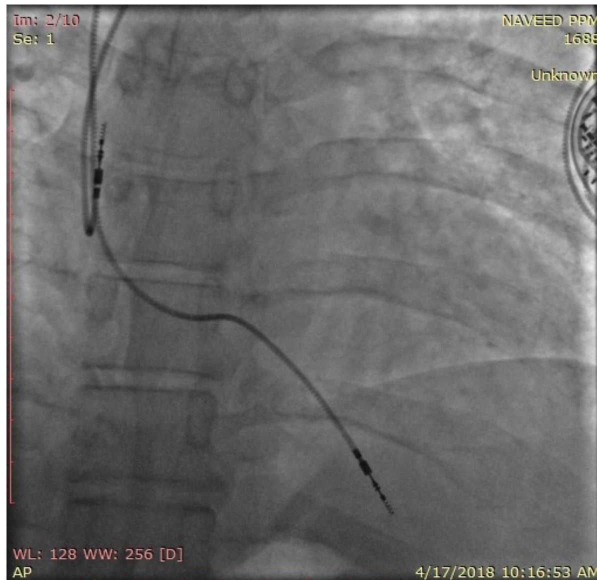
No	Parameters	Frequency	%tage
1	Total procedure	1670	
2	Age limit of patient	10 to 100 yrs	
3	Male	962	57.6%
4	female	708	42.4%
5	DDD/DDDR	535	32%
6	VVI/VVVIR	1030	61.7%
7	AICD	49	2.9%
8	CRTP	45	2.7%
9	CRTD	10	0.6%
10	Reveal loop	1	0.1%
11	Tine lead	28	1.67%
12	Screwing lead	1592	95.3%
13	Tine & screwing	49	2.9%
14	Leadless	1	0.1%

Table No. 2: Complication during procedure

Complication in Procedure			
		Frequency	Percent
Valid	Lead displacement	6	.4
	Failed	3	.2
	Svc dissection	2	.1
	Mild pericardial effusion	1	.1
	Haematoma	3	.2
	Infection	3	.2
	Pneumothorax	16	1.0
	Lead damage	3	.2
	Nil	1633	97.8
	Total	1670	100.0

Total 1670 devices implantation record from April 2010 to March 2018 was analyzed. It includes single chambers pacemakers, dual chambers pacemakers, AICD, CRTP and CRTD. The demographic data of the patient is presented in table 1. There were 962 (57.6%)

male and 708(42.4%) female patients. The ages of the patients were from 10 years to 100 years with Std. deviation of ± 16.361. The diagnosis at the time of implantation is shown graphically in figure 1. The rate of complication is presented in table 2. We got one patient with RV lead perforating RV apex. Patient presented with last of captured.



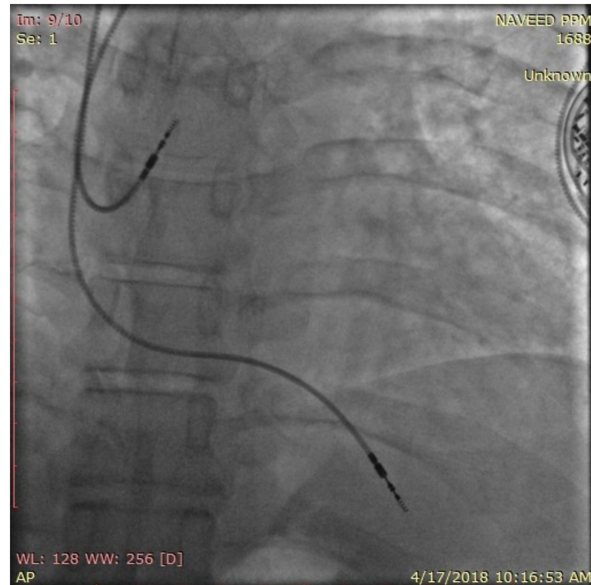


Figure No. 2: RA lead; the vector of force is from side to side i.e. perpendicular to the tip of the lead.

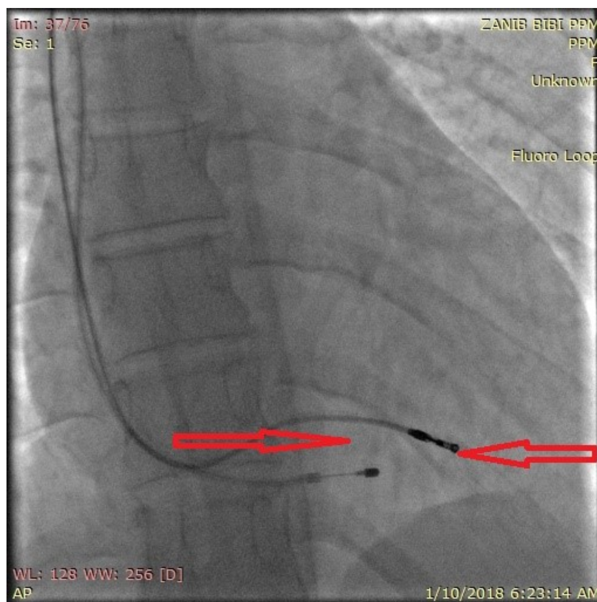


Figure No. 2: RV lead; the direction of the vector of force is toward the tip

DISCUSSION

Cardiac perforation by pacemaker lead is a potentially fatal complication. The incidence of lead perforation has been reported from 0.4% up to 5.2% and in some reports even up to as high as 15%.[13] The highest reported rate of perforation, based on autopsy, was 27% for patients with atrial leads.[19] The perforation is classified on the basis of duration since implantation. Perforations are labeled as acute; when it is occurring within 24h after implantation. It is labeled as sub-acute and chronic when the duration after implantation is within a month or after a month respectively.[18] The exact mechanism of lead perforation is not clear but certain factors possibly responsible in the pathophysiology of this dreaded complication.[20] The apex of RV is thinner than the RVOT, this is why, the reported perforation is more in the RV apex as compared to RVOT.[21] But contrary to this finding there are report of more perforation of RVOT as compared to RV apex.[22] Similarly RV wall which is about two times thicker than right atrium, logically one would anticipate a higher risk of atrial wall perforation. But there are report of more RV perforation as compared to RA, [22] certainly the underlying mechanism is not cardiac muscle mass nor the lead structure, but possibly the lead shape, while implanted in the cavity and the internal forces of the RA and RV and mechanism of contraction. The RV force is more as compared to the RA and the mechanism of contraction toward the lead is totally different. In RA the force is not on the tip of the lead but it is from side to side on the U shape cure of the RA lead figure 1. The reported incidence of autopsy for RA[13] was most of the time asymptomatic patients, so the possible cause was over screwing of the lead at the time of implantation which went unnoticed at the time of implantation and remain without any sequelae. On the other-hand the systolic force of the RV lead is directly transferred to the tip of the lead, which forces the lead to penetrate the tissue. Both these factors

can be modified by not too much screwing the lead and by implanting the RV lead in such a way that the distal part of the lead is turn down 2 to 3 centimeter proximal from the tip of lead, so the force of contraction will not directly force the lead to penetrate the heart: figure 2. Now if we consider RV apex to RVOT, mostly it is the apex which is consider the most vulnerable area for peroforation.[20] But some studies are against this and people have found that RVOT is the most perforated area as compare to the apex,[21] therefore it can be said that the U shape of the lead in the RVOT, which will divert the vector of the force of contraction, on one hand and the thicker muscular wall of the RVOT on the other hand, are not going to prevent the perforation. Here the possible mechanism is the whole force of the RV which accumulate toward the RVOT on one side and the long cure of the lead which force the tip to penetrate on the other side. If the tip of the lead is screwed in way that instead of the RV force reach directly to the tip, it is absorbed by a small curve near the tip, the concentration of force can be diluted. The two other factors which can force the lead are: the pacemaker lead stucture[23]and over torquing of the leads.[24] Some leads design were reported to be associated with more perforation than others, possibly due to the stiffness of the lead and the tip configuration.[25] Torque on the lead increased pressure force exerted by the thin pacemaker leads tip per unit of the ventricular wall and the imbalance between the pacemaker lead tip and the torque of the lead leads to RVOT perforation[9, 19] These two factors are modifiable factors. Torque should be not more than adequate and lead with very smart tip should be avoided. Apart from these factors, several studies have reported various factors that serve as predictors of lead perforation. These include temporary leads for long duration, steroid use, active fixation leads, low body mass index (<20 kg/m^2), older age, female gender, and concomitant use of anticoagulation.[26]

In our study we had only one patient who was having symptomatic perforation, we may have had possibly asymptomatic lead perforation but since we have no evidence, so we presume that the rate of perforation in our study remain very low. Therefore if we review all those factors responsible for the perforation of RV by pacemakers' lead, most of them can be very will tackle, if one remains vigilant during the procedure and it will help in the prevention of this dreaded complication.

CONCLUSION

Cardiac perforation by pacemaker lead is potentially a fatal complication. There is no single one factor responsible for the perforation of the heart due to permanent pacemaker's leads. However most of these factors can be modified if these factors are kept in mind at the time of implantation. This is how we can minimize the rate of this complication if not totally eliminate it.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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ACKNOWLEDGMENTS

List of all contributors who do not meet the criteria for Authorship, such as a person who provided purely technical help, writing assistance or department chair who provided only general support. Financial & Material support should be acknowledged.

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