

Hollow Abdominal Visceral Injuries following Minimally Invasive Gynecological Procedure: A 16 Year Experience

1. Nazimuddin Jat 2. Farhat Bano 3. Iqbal Ahmed Memon 4. Pir Bakhsh Khokhar
5. Muhammad Ahmed Azmi

1. Assoc. Prof. of Surgery, Al-Tibri MC, Karachi 2. Asstt. Prof. of Surgery, Al-Tibri MC, Karachi
3. Prof. of Surgery, Al-Tibri MC, Karachi 4. Prof. of Community Medicine, Al-Nafees Medical College Islamabad
5. Prof. of Physiology, Al-Tibri MC, Karachi.

ABSTRACT

Objective: To study the pattern of hollow abdominal visceral injuries during minimally invasive gynecological procedures.

Study Design: Retrospective, Descriptive Study.

Place and Duration of Study: This study was conducted at Fauji Foundation Hospital Karachi, Gulshan General Hospital Karachi, Star General Hospital Karachi and Al-Tibri Medical College Hospital from July 1997 to December 2013.

Materials and Methods: All patients admitted to above mentioned hospitals for minimally invasive gynecological procedures electively or in emergency were included in the study.

Results: Total 3050 minimally invasive gynecological procedures were carried out in the above mentioned hospitals and 77 (2.5 %) patients had complications following the procedures. Mean age was 28 years ranged from 20-55 years. 40 % patients had history of previous gynaecological surgery. Abdominal visceral injuries included small bowel perforation 30 (38.96 %) patients, sigmoid colon perforation 20 (25.97%) patients. Both small bowel and sigmoid colonic perforation 08 (10.38%) patients, Caecal perforation 01(1.29 %) patient and Urinary Bladder 01 (1.29%) patient. 52 % cases were diagnosed within two days of primary surgery and rest within 10 days.

Conclusion: All gynecologists must be skilled, vigilant and careful while doing minimally invasive gynecological procedures that visceral injury should not happen or ready to deal if it happens accidentally.

Key Words: Bowel perforation. Illegally induce abortions, Dilatation and Curettage, Dilatation and Evacuation, and Hysteroscopy.

INTRODUCTION

The visceral injury following minimally invasive gynecological procedures are not common but can happen and reported literature worldwide Incidences 0.3 % in premenopausal and 2.8% in post menopausal patients¹. They are known to happen during minimally invasive gynecological procedures such as Dilatation & Curettage(D&C), Dilation & Evacuation(D&E)and Hysteroscopy. Although these procedures have very low risk of complications and can also be performed as inpatients and out patients², but if complications occurs patient will require major invasive procedures like Laparoscopy and Laparotomy³. Common viscera injured are small bowel, large bowel, rectum and bladder⁴. Most of the patients who had these complications, the procedures were done by Mid Grade trained operators⁵, so complication rate is higher than normally reported. Approximately 1/3rd of the injuries can be diagnosed at the time of operation⁶. During Dilatation & Curettage (D&C), if cervical canal is narrow so chance of perforation is more. Canal should be dilated to avoid uterine perforation⁷, but gut perforation can be due to any instrumentation in the uterine cavity resulting in great morbidities and

mortalities⁸. In Pakistan, most of their illegal Dilatation & Curettage (D&C) are done by untrained mid wives so having chances of more complications⁹. Even in trained hands perforation to uterus and injury to viscera with Dilatation & Curettage (D&C), Dilatation & Evacuation(D&E) and hysteroscopy, can happen. Uterus and bowel injuries reported incidence is 3 % and Uterus and bladder injuries is 1 %¹⁰. So, in order to reduce the risk of uterine perforation different precautions should be taken, such as uterine cervix adequately dilated, severe uterine ante flexion or retro flexion noted, and intrauterine adhesions should be judged before procedures because if these rules are not followed, Can lead to uterine perforation¹¹ and other complications. Such group of patients is more prone for uterine perforation and other complications. Patient who are nulliparous, post menopausal with markedly retroverted uterus have more chances of perforation¹² than the patients who are adequately assessed before doing the procedure. Common complications during minimally invasive gynecological procedures are a) excessive bleeding pervagina i.e revealed or concealed b) Injury to abdominal viscera. c) prolapse of the bowel through vaginal orifice. d) Infection in the uterus or other pelvic organs. e) scarring of the uterus or cervix,

which may require further treatment.

MATERIALS AND METHODS

All patients admitted in gynae ward of three (03) Hospitals of Karachi already mentioned, their history, examination, diagnosis, primary procedure and complications, hospital stay, treatment given & intervention done were reviewed.

Fauji Foundation Hospital is 200 bed general infirmaries. The catchment area of the hospital is a populous neighborhood i.e Shah Faisal Colony Karachi. The patient population belongs to retired & deceased family members of military services along with general population. It is fully equipped with all the latest diagnostic & management facilities. Star general & Gulshan hospitals are private concern facilities. They have bed strength of 30 & 25 respectively. These hospitals mostly deal with gynecological & obstetrical patients. Fauji Foundation hospital Karachi had 1440 minimally invasive gynecological procedures done and complication noted in 36 (2.5%) patients and Gulshan general Hospital Karachi out of 1500 cases of minimally invasive gynecological procedures 36 (2.5%) patients had complications. At Star General Hospital out of 180 cases of minimally invasive gynecological procedures, 05 (0.34%) patients had complications. Surgeons were involved once called by gynaecologist, most of the time on first post operative day but rarely at the time of surgery. All these patients were resuscitated & blood was made available. Those patients who had excessive bleeding P/V were managed by gynaecologist or surgeon conservatively and cavity was packed. Excessive Bleeding p/v patients had hysteroscopy if bleeding point found, cauterization was done. Patients with intraperitoneal bleed or with peritonitis had laparoscopy, followed with whatever procedure required. During laparoscopy, if no visceral injury found the rent in uterine wall was repaired laparoscopically and drain in the pelvis inserted after peritoneal lavage. If bowel injury found, laparotomy was done. Finding of laparoscopy was confirmed during the laparotomy. If patient had faecal peritonitis due to solitary small bowel perforation, exteriorization of bowel done as ileostomy followed by peritoneal lavage but, if sigmoid solitary perforation found, loop colostomy was done with exteriorization of the injured bowel followed by peritoneal lavage. If both small bowel as well as sigmoid colon were injured, perforation in small bowel brought out as ileostomy and colonic perforation was repaired. If caecal perforation found, tube ceacostomy was done left there for six weeks and followed by gastrograftin enema and the tube removed. All these patients had triple regime antibiotic therapy (3rd generation cephalosporins, metronidazole & gentacin). During the procedures surgeon made sure that blood and blood products are

available if needed. Most of the cases were done under general anesthesia.

RESULTS

Mean age of the patient was 38 years but ages range between 20-55 years. Out of 77 patients 05 (6.49%) patients presented with excessive bleeding P/V, 04 (5.19%) patients with signs of shock because of intraperitoneal bleed and 03 (3.89%) patients with peritonism secondary to haemoperitonium, 60 (77.9 %) patients presented with peritonitis within 48 hours after primary procedure. 05 (6.5%) patients presented during primary procedure with prolapsed of bowel through the vaginal orifice. 30 (38.96%) patients had ileal perforation and 20 (25.97%) patients had sigmoid perforation and 08 (10.68%) patient had both ileal and colonic perforation, 01(1.3%) patient had caecal perforation and 01 had bladder perforation.

Table No.1: Visceral injury following minimally invasive gynecological procedures.

Complications	No of patients	% age
Small bowel perforation	30	38.96
Sigmoid colon perforation	20	25.97
Both small bowel & sigmoid colon perforation	8	10.38
Cecal perforation	1	1.29
Bladder perforation	1	1.29
Prolapse of bowel through vagina	5	6.5
Uterine Perforation	12	15.58
Total Complications	77	100

Table No.2: Distributions of patients according to clinical presentation

Clinical presentations	Frequency	% age
Abdominal pain	77	100%
Fever	42	55%
Excessive Vaginal bleeding	5	6%
Abdominal distention	23	30%
Vomiting	52	68%
Passing feces through vagina	9	12%
Visible loops of bowel through vagina	5	6%
Signs of peritonitis	60	78%

In solitary ileal perforation 03 patients died because of septicemia. All of them had wound infection except one. Average stay was 03 weeks. 02 patients had burst abdomen in between 7-10 days requiring mass closure, and 05 patients developed incisional hernia within 06 months. Patients with colonic and ileal perforation 04 patients died within 03 days because of septicemia, 05 have a very stormy recovery running a high grade swinging temperature. Ultrasound revealed multiple intra-abdominal abscess but patients recovered after

repeated ultrasound drainage and antibiotics and left the hospital after six (06) weeks. Cecal perforation had tube ceacostomy done and removed without any untoward effect.

Table No.3: Post Operative Complications

Postoperative complications	Frequency	Percentage
Surgical site infections	28	38%
Postoperative pyrexia	14	19%
Postoperative diarrhea	8	11%
Wound dehiscence	2	3%
Enterocutaneous fistula	4	5%
Mortality due to Sepsis	7	10%
Pelvic abscess	5	7%
Incisional Hernia	5	7%
Total	73	100%

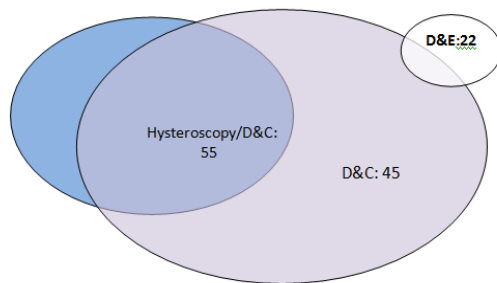


Figure No. 1: Total and different gynecological procedure showing 10 hysteroscopy, 45 dilation & dilation & curettage and 22 Dilation & evacuation cases.

DISCUSSION

Hollow visceral injury incident following to minimally invasive gynecological procedures is a rare event and lack of published information makes it difficult to compare and review the findings. Our findings showed that 2.52 % of all abdominal visceral injuries occurred in minimally invasive gynecological procedures. The other reported data showed variation ranging from 5-18 %¹³. The lower rate in our series is probably because of the handing of all procedures by consultants. As reported by many authors majority of patients were in very poor general condition at the time of operation¹⁴. But still surgery was carried out because surgical intervention is considered to be gold standard of treatment of any visceral injury following minimally invasive gynecological procedures¹⁵. These patients present late to the primary physician with the problem so intervention by primary Physician also resulted in complication and these complication when arises both the patient and family and physician fearing legal consequences do not seek help from specialist center. The few fortunate patients reaching health care facility represent only the tip of an ice berg⁹. The patients with perforation of uterus have a history of previous pelvic

or abdominal surgery¹⁶. In our series nearly 50% of patients have previous pelvic or lower abdominal surgery as reported also by Mesdaghinia E, et al.¹⁷. In our series perforation of uterus and complications following Dilation & Curettage is reported 58.44 % in 45 patients but generally reported in literature injuries to the viscera and the uterus in 20 % cases¹⁷. We had 10 patients of hysteroscopy and only 01 perforation noted but in literature reported 03 % complications following hysteroscopy in safe hands and only 01 % uterine perforation¹⁸. Bowel injuring may occur during variety of surgical procedures but smaller and substantial number occurs during less extensive procedures such as uterine curettage and laparoscopy⁶. The bowel may be injured with the curette, ovum forceps or uterine sound, or even the plastic cannula. Bowel perforation occurs when the posterior vaginal wall is violated, allowing the instrument to pierce the underlying structures. The management of cases with intestinal injuries following minimally invasive gynecological procedures poses some major challenges to general surgeons and gynecologists practicing in resource-limited countries. As in our study the most of complication occur during minor procedures such as Dilation & Curettage (D&C). The major problem during laparotomy is to decide whether to close the rent in the bowel or do resection anastomosis. We made a rule to do resection anastomosis if more than 50 % diameter is involved and this is also reported same in literature¹⁹. Perforation of uterus and complications are more likely to happen if surgeon is not very experienced, as in our case maximum perforation occurred in Gulshan General Hospital because the operator was not experienced, as reported also by copper that 33 % of uterine perforation occurred during the surgeon's first procedure¹². Minimally invasive gynecological procedures specially D&C for abortion is the commonest procedure and in countries where abortion is legalized, mortality and morbidity related with the procedure declined significantly.²⁰

CONCLUSION

It is recommended that minimally invasive gynecological procedures should be carried out by a trained & skilled operator to avoid complications. The operator should have an adequate knowledge regarding the size of uterus, wall thickness and the scaring on the uterus. Early recognition, aggressive resuscitation and early surgical management by institution are of paramount importance if morbidity and mortality associated with bowel perforation is to be avoided. The gynecologist should be competent to deal with the complications to reduce maternal morbidity and mortality in the circumstances where surgical help is not readily available.

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Address for Corresponding Author:**Prof. Dr. Muhammad Ahmed Azmi,**

A-815, Sector 11-A

North Karachi 75850

Karachi – Pakistan

Cell: 0333-2371281

E-mail: azmiahmed@hotmail.com