

Comparison of Medical and Surgical Management Options for Incomplete Abortion

Fouzia Shaikh, Sabreena Abbas, Nabila Hassan, Sabreena Talpur and Sajida Yousfani

ABSTRACT

Objective: To compare the maternal outcome in medical versus surgical management of incomplete abortion.

Study Design: Comparative cross-sectional study

Materials and Methods: This study was conducted at the Department of Obstetrics and Gynaecology Unit II Liaquat University Hospital Hyderabad from 1st August 2015 to 31st July 2016.

Materials and Methods: Non-probability purposive sampling of 100 patients was done. During the study period, a total 100 cases of incomplete abortion were enrolled in the study with gestational age <12 weeks and vaginal bleeding with ultrasound showing retained products of conception for comparison analysis. Half of them were given Misoprostol 200 µg twice daily for 5 days, and out of rest, 25 underwent manual vacuum aspiration and 25 underwent conventional evacuation under anaesthesia. Maternal outcome was noted and compared in both groups using chi square test.

Results: The mean age of women in both study groups was 28.09+5.60 years. Majority of women were multiparous with mean parity 2.90+ 2.25. Mostly the women were at gestational age of 10 weeks. Maternal complications were less in medically treated group (22%) as compared to surgically treated group (46%) with P-value 0.011.

Patients who underwent Manual vacuum aspiration had lesser infection rates than those who underwent evacuation under anaesthesia (P-value=0.022).

Conclusion: Medical treatment is the safest method to offer to a women with retained products of conception with least side effects and no hospital stay. Manual vacuum aspiration is a safe alternate to evacuation under anaesthesia where medical treatment fails or is contraindicated.

Key Words: Incomplete abortion; medical treatment, surgical treatment, manual vacuum aspiration; evacuation under anaesthesia.

Citation of article: Shaikh F, Abbas S, Hassan N, Talpur S, Yousfani S. Comparison of Medical and Surgical Management Options for Incomplete Abortion. Med Forum 2017;28(3):40-43.

INTRODUCTION

Miscarriage (abortion) is defined as the spontaneous loss of a pregnancy prior to the age of viability of fetus¹. Each year throughout the world, approximately 210 million women became pregnant and out of them some 80 million pregnancies end in still birth, or spontaneous or induced abortion². In countries where abortion is legal it is usually very safe in contrast to the countries where abortion is restricted and large numbers are performed under unsafe conditions³. In United States, the overall mortality rate from abortion is 1.1/100,000 of legally induced abortions. Approximately 1.2 million legal abortions are performed annually in the united states⁴. Data form developed countries suggest that about 15 % of pregnancies end in miscarriage.

¹. Department of Obstet Gynae Liaquat University Hospital Hyderabad.

Correspondence: Dr. Fouzia Shaikh, Assistant Professor, Obstet Gynae, Unit-II, Liaquat University Hospital Hyderabad.

Contact No: 0300-9377475

Email: doctor.fozia@yahoo.com

Received: January 09, 2017; Accepted: February 13, 2017

Distinguishing between an incomplete spontaneous abortion and induced abortion is significant as there is high-risk of complications as uterine perforation, infection, infertility. Incomplete miscarriage is a major public health problem in developing countries¹.

Management of miscarriage includes expectant, medical and surgical. Expectant management of miscarriage is safe and likely to be cost-effective. In medical treatment the misoprostol is commonly used worldwide⁵. Medical treatment using an antiprogestin, mifepristone (RU486), followed by a prostaglandin (misoprostol or gemeprost), can also be used for evacuation of uterine cavity. Medical approach is easy, safe and given as outpatient basis^{6,7}. Of the Surgical techniques used in the first trimester. Manual vacuum aspiration is commonly applied to uterine evacuation using a hand-held syringe as the source of vacuum⁸.

Vacuum technique is quicker, produces less blood loss, and has a lower rate of perforation hospitalization for post abortal infection than sharp curettage. Vacuum aspiration should whenever possible; replace dilatation & curettage^{9,10}. Other surgical treatment option is dilatation & curettage. It is less safe and more painful than aspiration, so reserved for patients in whom other options fail or not available⁹.

Considering the prevalence of this problem and multiple methods available for managing a case of incomplete abortion, this study was planned. The objective of this study is to compare the maternal outcome in medical versus surgical management of incomplete abortion. By conducting this study, we may be able to appreciate the first line option for all women with incomplete abortion in our setup and reduce the associated maternal morbidity and mortality.

MATERIALS AND METHODS

The patients fulfilling the inclusion criteria (gestational age < to 12 weeks with vaginal bleeding, ultrasound showing retained products of conception) admitted either from outpatient department or through emergency were enrolled in the study after well-informed verbal consent. Hemodynamically unstable patients, those beyond first trimester, with bleeding disorders or other comorbidities were excluded from the study. Patients were randomly assigned to two equal groups. Group I patients were given Tab Misoprostol 200µmg orally twice a day for 5 days to evacuate the uterus and Group II patient received surgical management. Half of them underwent Manual vacuum aspiration and the rest underwent evacuation under anesthesia. Relevant obstetric history and examination carried out. Maternal outcome was measured in terms of uterine infection, perforation and failure of procedure in terms of incomplete evacuation diagnosed on ultrasound on day 7 of treatment. Data was collected on a pre-designed proforma and analysed on computer software SPSS version 19. Chi square test was used to compare the outcome between groups with P value < 0.05 taken as significant.

RESULTS

It was observed that among the Group I cases (Medical treatment group), the mean±SD age was 28.4±4.56 years. In Group II (surgical treatment group) mean±SD age 27.78±6.52 years. Considering parity, in group I majority were multiparous with 19 (38%) cases and the mean±SD parity in this group was 3.0±2.30. Among group II cases also, majority were multiparous with 22 (44%) cases and the mean±SD parity in this group was 2.80±2.21.

Regarding gestational age, in group I the most frequently presented gestational age was 10 weeks presented by 21 (42%) cases. Amongst group II also the most frequently presented gestational age was 10 weeks presented by 17 (34%) cases. Among medical treatment group 39 (78%) cases did not develop any complication, 2 (4%) cases developed infection and 9 (18%) cases had incomplete evacuation. Among surgical treatment group 27 (54%) did not develop any complication, 6 (12%) cases developed infection, 5 (10%) cases had perforation and 12 (24%) cases had incomplete evacuation. Cases treated by manual

vacuum aspiration were less likely to develop infection than cases treated by dilatation and curettage and the difference was statistically significant (Chi square = 9.61, P-value = 0.022). Among medical treatment group 38 (76%) cases were successfully treated for incomplete abortion whereas among surgical treatment group 37 (74%) cases of incomplete abortion were successfully treated. There was not statistically significant difference in success rate between both treatment modalities (Chi square = 0.53, P-value = 0.817).

Table No.1: Complications Among Procedures in Surgical Treatment Group (n=50)

Complication	MVA (n=25)	D&C (n=25)
None	16 (64%)	11 (44%)
Infection	01 (04%)	05 (20%)
Perforation	0 (0%)	05 (20%)
Incomplete Evacuation	08 (32%)	04 (16%)

Chi Square = 9.61, P-value = 0.022

MVA = Manual Vacuum Aspiration

D&C = Dilatation and Curettage

Table No.2: Comparison of Outcome Between Both Groups (n=100)

Treatment Outcome	Medical Treatment Group (n=50)	Surgical Treatment Group (n=50)
Successful	38 (76%)	37 (74%)
Unsuccessful	12 (24%)	13 (26%)

Chi Square = 0.53, P-value = 0.817

DISCUSSION

Surgical techniques for first trimester pregnancy abortion have been practiced since ancient times. Progress in methods, development of improved procedures and inventions of better equipment have been done in the greater benefit of women as well as for ease of the clinicians. The most widely practiced surgical techniques for first trimester abortion in this modern world are dilatation and curettage (D&C) and vacuum aspiration—of which manual vacuum aspiration (MVA) is more likely to be used among resource limited developing countries like ours¹¹.

Progression in medical technology has offered women a safer, cheaper and simpler alternative namely ‘medical abortion’¹². Since more than a decade This treatment is gaining acceptance by clinicians and patients¹³. Although misoprostol could be given alone to induce a miscarriage, some studies have reported that its effectiveness is still low in addition to a higher rate of side effects¹⁴. While mifepristone and misoprostol is registered in the WHO Model List of Essential Medicines¹⁵ and is recommended to be used for early pregnancy terminations¹⁶, this is not the case in Pakistan where mifepristone has yet to be registered,

leaving clinicians with misoprostol alone instead of a better option of these two drugs combined.

In the present study the mean \pm SD age was 28.09 \pm 5.60 years. Similar observations were made by Sochet T et al¹⁷ and Zhang J et al¹⁸. In a study carried by Woldetsadik MA et al¹⁹ the reported mean age of study population was 23.0 \pm 4.4 years, which is quite lower than that encountered in the present study.

In the study 34% subjects were nulliparous. Similar observations were made in another study from Pakistan by Farooq F et al²⁰. However, contrast reports have also been published. Zhang J et al¹⁸ reported lower proportions of nulliparous cases i.e. 22%, whereas Woldetsadik MA et al¹⁹ reported quite higher proportion of nulliparous cases i.e. 67.3%. This difference in the proportion of nulliparous cases seems to be highly correlated with the age of the women because there is a considerable difference in mean age of the subjects between these studies.

The mean gestational age was 9.93 \pm 1.52 weeks. Graziosi GCM et al²¹ reported similar findings. In contrast, Bagratee JS et al²² have reported a higher mean gestational age i.e. 10.6 \pm 1.3 weeks, whereas Woldetsadik MA et al¹⁹ reported lower mean gestational age i.e. 7.4 \pm 1.2 weeks. This difference in gestational age also seems to be correlated with the age of the subjects in a directly proportional manner.

In the present study the safety of medical abortion was compared with surgical abortion. Among medical abortion group only 4% cases developed infection in comparison of surgical abortion group in which 22% cases developed complications i.e. 12% developed infection and 10% developed perforation. Hence, medical abortion was found to be the far safer method than surgical abortion in the present study. However, unlike the present study, medical abortion is likely to have similar or higher complication than surgical abortion. Trinder J et al²³ reported non-significantly different complications between two methods, whereas Woldetsadik MA et al¹⁹ reported a higher complication rate in medical abortion group than surgical abortion group i.e. 11.6% and 6.3% respectively. Most of the studies available in the literature on management of first trimester abortion have been conducted on large scale with careful selection of subjects, heavy funding, supported by a government or an NGO, and/or carried out by skilled and designated medical personnel. On the other hand, the present study was carried out in a tertiary care hospital of a developing country with limited resources. The cases were dealt as per hospital protocol by different teams who may have different skill levels in performing the relevant surgical procedures and in use of particular tools. Also, the sterilization levels may not be up to the mark sometimes. These all factors may have added up and caused this higher complication rate. 20% complications among surgically treated group were

developed in cases who underwent D&C and only 2% in those who underwent MVA. Similar results were reported by Farooq F et al²⁰. In their study more complications were developed in D&C group than in MVA group with very high statistically significant difference ($p < 0.0001$).

In the present study, the difference of success rate between medical abortion and surgical abortion was statistically non-significant ($p = 0.817$). Moodliar S et al²⁴ reported insignificantly lower success rate in medically treated group, as also reported by Zhang J et al¹⁸ Woldetsadik MA et al¹⁹. However, Graziosi GCM et al²¹ reported significantly low success rate in medically treated group (53%) than in surgically treated group (96%).

CONCLUSION

Medical treatment is found to be a safer mode of treatment than surgical treatment in terms of complications. Both medical and surgical methods for the treatment of incomplete abortion were similarly efficient in terms of success rate. Among surgically treated cases, manual vacuum aspiration was safer option than D&C in terms of complications.

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

REFERENCES

1. Clip chase J. Jones, D. Randomised trial of expectant verses surgical management of spontaneous miscarriage Br J Obstet Gynaecol 1997;104:840-1.
2. Jones EF, Forrest JD. Under-reporting of abortion in surveys of U.S woman:1979 to 1988. Demography 1992;29(1):13-6.
3. Ahman E, Shah I. Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated morbidity in 2000. 4th ed. Geneva: world health organization; 2004.
4. Koonin LM, Smith JC, Ramicle M, Green CA. Abortion surveillance united states, 1993 and 1994. MMWR August 1997;46(SS-4);37-98.
5. Ankum WM, wieringa-de W. management of spontaneous miscarriage in the first trimester: an example of putting informed sheard decision making into practice. Br Med J 2001;322: 1343-46.
6. McIntosh PE. Woman's preference for altisbutes of first- trimester miscarriage management. A Steted Preference discrete-choice experiment. Value Health 2009;12(4):551-9.
7. Diop A, Raghavan S, Rakstova JP, comendant R, Blumenthal PD, Winikeoff B. Routes of administration for misoprostol in the treatment of incomplete abortion: a randomised clinical trial. Contraception 2009;79-81.

8. Shwekerla B, kalumuna R, kipingili R, Mashalea N, Westheimer E, Clark W, et al. Is intrapartum asphyxia preventable? *BJOG* 2007;144(11): 32-5.
9. Neilson JP, Hickey M, Vazquea JC. Medical treatment for early fetal death. *Cochrane Database of systemic review* 2006.
10. Von Hertzen H, Honkanen H, Piaggio G, Bartfai G, Erdenetungalag R, Gemzell-Danielsson K, et al. WHO Research Group on Post-Ovulatory Methods for fertility Regulation. WHO multinational study of three misoprotol regimens after mifepristone for early medical abortion: Efficacy. *Bri J Obstet Gynaecol* 2003;110 (9):808-818.
11. Borgatta L, Stubblefield PG. Surgical techniques for first trimester abortion. *Lib Women's Med.* 2008;10:3843-5.
12. Guidelines and Audit Committee of the Royal College of Obstetricians and Gynaecologists. The management of early pregnancy loss: clinical green top guidelines. London: RCOG 2000.
13. Robledo C, Zhang J, Troendle J, Barnhart K, Creinin MD, Westhoff C, et al. Clinical indicators for success of misoprostol treatment after early pregnancy failure. In *J Gynaecol Obstet* 2007; 99(1):46-51.
14. Tong WT, Low WY, Wong YL, Choong SP, Jegasothy R. Exploring pregnancy termination experiences and needs among Malaysian women: a qualitative study. *BMC Public Health* 2012;12: 743-9.
15. WHO: The 17th WHO Model List of Essential Medicine, Geneva: WHO; 2012. Available at: http://www.who.int/selection_medicines/list/en/
16. WHO: Frequently asked questions about medical abortion: conclusions of an International Consensus Conference on Medical Abortion in Early First Trimester Bellagio, Italy. Geneva: WHO; 2006.
17. Sochet T, Diop A, Gaye A, Nayama M, Sall AB, Bukola F. Sublingual misoprostol versus standard surgical care for treatment of incomplete abortion in five sub-Saharan African countries. *BMC Pregnancy and Childbirth* 2012;12:127-131.
18. Zhang J, Gilles JM, Barnhart K, Creinin MD, Westhoff C, Frederick MM, et al. A comparison of medical management with misoprostol and surgical management for early pregnancy failure. *N Engl J Med.* 2005;353(8):761-9.
19. Woldetsadik MA, Sendekie YT, White MT, Zegeye DT. Client preferences and acceptability for medical abortion and MVA as early pregnancy termination method in Northwest Ethiopia. *Rep Health* 2011;8:19-25.
20. Farooq F, Javed L, Mumtaz A, Naveed N. Comparison of manual vacuum aspiration, and dilatation and curettage in the treatment of early pregnancy failure. *J Ayub Med Coll Abbottabad.* 2011;23(3):28-31.
21. Graziosi GCM, Mol BWJ, Reuwer PJH, Drogdrop A, Bruinse HW. Misoprostol versus curettage in women with early pregnancy failure after initial expectant management: a randomized trial. *Human Rep* 2004;19(8):1894-9.
22. Bagratee JS, Khullar V, Regan L, Moodley J, Kagoro H. A randomized controlled trial comparing medical and expectant management of first trimester miscarriage. *Human Rep.* 2004; 19(2):266-71.
23. Trinder J, Brocklehurst P, Porter R, Read M, Vyas S, Smith L. Management of miscarriage: expectant, medical, or surgical? Results of randomized controlled trial (miscarriage treatment (MIST) trial). *Br J Med* 2006;1136-45.
24. Moodliar S, Bagratee JS, Moodley J. Medical vs. surgical evacuation of first-trimester spontaneous abortion. *Int J Gynaecol Obstet* 2005;91(1):21-6.