

Comparison of Expectant and Surgical Management of Incomplete First-Trimester Miscarriage

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Objective: To compare the maternal morbidity in terms of durations of hospital stay, duration of vaginal bleeding and presence of complications, following expectant management with surgical management of incomplete first-trimester miscarriage.

Study Design: Quasi Experimental Study

Place and duration: The study was conducted for one year and two months, from 20th December 2011 to 20th of February 2012, Department of Obstetrics and Gynecology, Bahawal Victoria Hospital, Bahawalpur.

Materials and Methods: Total 150 cases were included in the study. They were divided into two groups each having 75 fulfilling the inclusion criteria. Group A had those who were managed expectantly and Group B comprised those having surgical evacuation of the uterus.

Results: Mean hospital stay was 1.3 days in expectant and 1.5 days in surgical group. Bleeding lasted longer in expectant (10.1 days) than surgical group (7.3 days). Gynecological infections was diagnosed in 9 cases (6%), 3 cases (4%) in expectant and 6 (8%) in surgical group. Emergency evacuation was performed in 8% cases in expectant group against 4% cases in surgical group. 15 cases (20%) in expectant group failed to expel spontaneously compared to only 5 cases (6.6%) in surgical group. No mortality was observed in both groups.

Conclusion: Expectant management is less efficient mode of treatment compared to surgical evacuation but can be an alternative to ERPC in women who are clinically stable and giving option for this treatment modality.

Key Words: Miscarriage, Evacuation of the retained products of conception.

Introduction

The term spontaneous miscarriages implies the natural loss of pregnancy before viability. Viability is generally considered to occur at approximately 24 weeks of gestation.¹ Most studies estimate that 15-20% of clinically recognized pregnancies end in miscarriage.¹ According to a local study 11.4% was the prevalence of miscarriage.²

Miscarriages are of different types. Painless vaginal bleeding occurring at any time between implantation and 24 weeks of gestation is termed as threatened miscarriage where as early embryonic or fetal demise is type of miscarriage in which failure of the pregnancy is identified before expulsion of the fetal and placental tissue (usually by repeated ultrasound examination). Another type is inevitable miscarriage which means that the process of miscarriage has begun and cannot be stopped or reversed. It can be subdivided into complete and incomplete miscarriage depending upon whether all or not all fetal and placental tissues have been expelled from the uterus.³ Lastly recurrent miscarriage in which three or more consecutive miscarriages occur. It can be further subdivided into primary recurrent miscarriage

and secondary recurrent miscarriage. In primary recurrent miscarriage there have been no previous live births. Where as at least one previous successful pregnancy has occurred in secondary recurrent miscarriage. It can present clinically as any of the previously described forms of miscarriage.³

Commonest type of miscarriage is incomplete i.e. 30.4%.² The exact pathophysiology resulting in the uterine expulsion of early pregnancy remains unknown. Abnormal placentation (either primary or itself secondary to early fetal demise) can either lead to reduced or shallow uterine invasion by the trophoblast or can itself be caused by reduced invasion. In this situation, the usual reduction in maternal vascular tone cannot occur. It is presumed that this blood flow enters the intervillous space and dislodges the conceptus, thereby leading to embryonic demise if this has not already occurred. Once the conceptus is dislodged, there is further intrauterine bleeding; local prostaglandins release will lead to pain and ultimately expulsion of the conceptus and any associated blood.³

Diagnosis of incomplete miscarriage can be made on the basis of history, examination and investigation. Women who are actively in the process of having a spontaneous miscarriage usually present with history of

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amenorrhea, vaginal bleeding and crampy abdominal pain. The process of examination includes abdominal examination and Per-vaginal Examination. The most important investigation is ultrasonography. Usually transvaginal ultrasound is essential in the diagnosis of miscarriage, because clinical history alone is not always a useful guideline to the diagnosis and clinical management of incomplete miscarriage. Therefore clinicians have been increasingly relying on ultrasonography to select women for type of management.^{4,5}

As far as management is concerned, expectant, surgical and medical management are widely accepted treatment options.⁶ The standard management of miscarriage for more than 50 years has been surgical evacuation of the retained products of conception (ERCP) because of the fear of hemorrhage and sepsis secondary to retained products. However evacuation of retained products of conception is associated with risk of anesthesia, hemorrhage, infection, cervical trauma, uterine perforation and intrauterine adhesions.⁷

The advent and widespread use of antibiotics, improved general health of women, easy access to health services and improved diagnostic facilities have resulted in investigators studying non-surgical methods for the treatment of miscarriage.⁷ Various therapeutic agents have been used for medical management of women with spontaneous miscarriage including hypertonic fluids, mifepristone, prostaglandins (natural and synthetic) and other oxytocins. Some of these agents have now been abandoned because of their health hazards, particularly hypertonic solutions and sulprostone.⁸

In medically managed patients complete expulsion occurred in 71% by day three and 84% by day eight. Pregnancy duration did not affect the rate of successful expulsion. Both medical and surgical therapies were safe, effective and acceptable to patients.^{7,9,10}

Many investigators are in the favor of expectant management or conservative management. It describes the watchful waiting of the occurrence of spontaneous miscarriage instead of surgical intervention.⁸

Expectant management avoids a surgical procedure so allows the woman to continue her normal daily routine. It is more acceptable to women and causes fewer effects on the quality of life.¹¹ Primary care physicians in Neitherland and elsewhere strongly favor the use of expectant management, and it is likely that many miscarriages are managed expectantly in primary care.¹²

It is an alternative for women with early pregnancy failure at less than 13 weeks of gestation who have stable vital signs and no evidence of infection.¹²⁻¹⁵

The possible impairment of future fertility following conservative management has been one of the main reasons responsible for clinician's reluctance to

encourage women to select expectant management. The cumulative conception rates in women managed expectantly but who later required surgical evacuation were 93%, those managed expectantly 91% and those managed with primary evacuation 88%. Despite the assuring reports further evidence is required.⁸

Expectant management of first trimester miscarriage has been compared with evacuation of retained products of conceptions since 1995 with varying results. A number of clinical trials reported that expectant management usually achieved complete evacuation of products of conception within two weeks of diagnosis with low infection rate.²⁰ But reports from secondary care settings are less encouraging about expectant management. In one report, the incidence of prolonged bleeding and the success rates of expectant management were so low that its use was considered unjustified in clinical practice.¹

In our setting incomplete miscarriage is not an uncommon event. The risk of infection in such cases is quite high. The aim of our study was to compare the outcome of surgical and expectant management for incomplete miscarriage in our local setting, so an effective and safe method can be recommended out of these two.

Materials and Methods

The Study was conducted at Department of obstetrics and gynecology, Bahawal Victoria Hospital, Bahawalpur. 150 clinically and ultrasonography confirmed cases of incomplete first trimester miscarriage were included. They were allocated randomly to the two regimens with 75 cases in each.

Non-probability purposive technique was used to select 150 eligible cases. They were divided into two groups (A and B) comprising of 75 subjects each.

Inclusion criteria included, first trimester incomplete miscarriage, hemodynamically stable, 20-35 years of age

Exclusion Criteria included

Missed miscarriage, Induced miscarriage, With comorbidity like diabetes, cardiac diseases, hypertension, chronic renal and airway diseases, previous cesarean section or any other uterine surgery patient were also excluded.

All the patients, who reported through emergency department for medical consultation for signs of an ongoing incomplete miscarriage, were seen. Their demographics were noted. Diagnosis was made on the basis of history, examination and investigations. All the diagnosed patients full filling the inclusion criteria were explained the objective, merits and demerits of the study and their written informed consent was taken. The first patient full filling the eligibility criteria was allocated groups randomly by offering to pick up one of the two folded slips bearing letter "A" and "B". She was allocated

to the groups according to the slip picked. Subsequent allocation was made in each groups in such a manner that they resembled as far as age, parity, social and educational status, occupation and residential status were concerned to minimize the effects of confounders. The group A was managed expectantly and group B was managed by surgical evacuation of the uterus.

In expectant group, during the initial consultation the patients were informed about expected pain and bleeding. They were asked to have a record of number of days of vaginal bleeding, temperature or development of purulent vaginal discharge on a diary and were advised to report immediately to hospital if they had unacceptable bleeding any time after they were sent home. Hospital stay if needed for emotional support, an anti-D prophylaxis, and investigations was noted and patients were sent home. All women were scheduled for a follow up visit 7 days after primary visit then weekly for 1 month. At each visit, women had physical and ultrasound examination. During the weekly visit, diaries were taken in and patients received instructions about the diary for the next interval. Patients who developed infection or excessive bleeding underwent emergency evacuation. Those women who had retention of gestational residue at even four weeks after the initial diagnosis confirmed by ultrasound were labeled as failure to expel and were offered surgical evacuation of the uterus.

In surgical group patients were scheduled for dilatation and curettage depending upon the availability of theatre facilities. If the patient developed excessive bleeding while waiting for scheduled evacuation, an unscheduled (emergency) evacuation was performed. Patients left the hospital when stable and number of days of hospital stay was noted. They were asked to maintain the diary in the same way as advised to expectant group. They were asked to have follow-up visits after 7 days and

then weekly for 1 month. At each visit they had physical and ultrasound examination and their diaries were checked. Surgical evacuation was considered unsuccessful if second curettage was needed anytime within 1 month as confirmed by the retention of gestational products.

All the information was collected through a specially designed Performa attached which consisted of two parts.

First part contained sociodemographic variables and was filled at the time of recruitment. Second part comprising of study variables was filled later on during the follow-up visits. Data was analyzed by using SPSS version 16.

Results

Total 150 clinically and ultrasonographically confirmed cases of incomplete first-trimester miscarriage were included in the study. They were divided into two groups each having 75 cases. Group "A" included those patients who were managed expectantly and group "B" included those who were managed by surgical evacuation of the uterus. Maternal morbidity with reference to study variables in both groups was noted and compared.

The mean duration of hospital stay in both groups. This was not very much different (1.3 versus 1.5 days). This difference was not statistically significance as p-value was 0.152 .

Vaginal bleeding lasted longer, for a mean time of 10.1 days in expectant group compared to 7.3 days in surgical group. The difference was statistically significant as P-value was 0.000. Table I shows the various complication observed among patients of the two groups.

No mortality was observed in both groups.

Table I: Comparison of Expectant & Surgical Management of Incomplete First- Trimester Miscarriage (n=150)

Sr. No.	Complications	Management		Total	P-value
		Expectant	Surgical		
1.	Infection	Yes 3(4%)	Yes 6(8%)	9(6%)	0.302
		No 72(96%)	No 69(92%)	141(94%)	
		75	75	150	
2.	Excessive Bleeding Requiring Emergency Evacuation	Yes 6(8%)	Yes 3(4%)	9(6%)	0.302
		No 69(92%)	No 72(96%)	141(94%)	
		75	75	150	
3.	Failure To Expel	Yes 15(20%)	Yes 5(6.6%)	20(13.3%)	=0.016
		No 60(80%)	No 70(93.3%)	130(86.6%)	
		75	75	150	

Discussion

It is evident that statistical data of our study in general similar to those reported from other recent large studies of incomplete abortion but most of it is not statistically significant. This is probably of small sample size, as randomized trials have very large study population. So absolute comparison is difficult as number of patients, method of study and projection of problem differ in different studies, series or countries.

In our study, the outcome of expectant management and surgical evacuation was studied in women with a diagnosis of incomplete miscarriage. It is one of the few studies carried out in Pakistan in this regard.

Results of our study confirm the results of other recent large studies^{16, 17} and demonstrate that expectant treatment is a less efficient mode of treatment when compared to surgical evacuation but can be an alternative to evacuation of the retained products of conception in women who are clinically stable and ready to accept this treatment modality.

The duration of hospital stay in our study was not very much different in both groups showing statistically non-significant results.

Bleeding was prolonged in expectant group as compared to the surgical group (10.1 versus 7.3 days). Margrett et al also confirmed the same fact in their study but their mean duration of bleeding was more prolonged compared to that of our study (17 versus 13 days).¹⁸

Gynecological infection is a feared complication of early miscarriage and the rationale for treatment with surgical evacuation is largely to avoid infection. Post procedure diagnosis of infection was lower in expectant group (4%) as compared to that of 8% in surgical group. Results are comparable to that of Febe Blohm who observed that only 3% patients in his study demonstrated infection.¹⁹

Our results however differ from the study of Saad Rana

who described that none of their cases, managed expectantly had infection.²⁰ The chances of infection are always high in the intervention and surgical procedures.

Many doctors are reluctant to recommend expectant management based on the risk of excessive vaginal bleeding. This risk has been proved in earlier studies²² and was again demonstrated in our study as well. 8% cases in expectant group had an emergency evacuation due to excessive bleeding while 4% cases in surgical group had unscheduled ERCP.

The results of our study are less encouraging for expectant management when compared to the results of other studies found in literature e.g., Febe Blohm and Humera Aziz.^{19, 20} Need for unscheduled evacuation of the retained products of conception in surgical group is also high (4%) when compared to the results of Grasiozi study which described only 2.7% of cases needed

emergency unscheduled evacuation of the retained products of conception,²¹ this difference may be due to different selection criteria in both studies.

The expectant group was more likely to have incomplete miscarriage. 20% women in expectant group failed to expel completely, showing comparable results to that of Febe Blohm¹⁹ and also that of Shelley JM.¹⁵ The failure observed in our study is quite high when compared to Saad Rana who describes failure in only 3.7% cases managed expectantly.²⁰ However our results are better as compared to that of Alexandro Sotiriadis who showed 61% women failed to expel in expectant group.²² However, these differences are due the fact that time frame for declaring the process incomplete varied across these studies.

Fortunately no mortality was observed in both groups.

Conclusion

The success rate of expectant management is less favorable than has been reported earlier, because expectant management led to higher risk of incomplete miscarriage and prolonged bleeding. Indeed. In contrast surgical evacuation was associated with a significantly higher risk of infection. Given the lack of clear superiority of either approach, the women's preference should play a dominant role in decision making.

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