Original Article

Comparison of Medical Vs Surgical Management of Missed Abortion

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Objective: To compare the outcome of medical vs. surgical management of missed abortion in terms of success rate and complications

Material and Methods: All the participants were admitted in hospital gynecology ward and were divided into two groups. 55 women were randomly selected to undergo surgical management i.e. D&C and 75 women to receive medical treatment with oral misoprostol 400µgm thrice daily for 2 days.If the patient did not expel products of conception during 48 hours, her medical management was considered to be failed and surgical evacuation was done. Data collection was done on a structured Performa which was then entered on excel Data sheet and analyzed on spss20 statistical package.

Results: Surgical management was successful in 100% cases. Complications were more with surgical management i.e. nausea, vomiting, postoperative fever, lower abdominal pain, excessive bleeding, need for blood transfusion and genital tract trauma. Medical management had a lower success rate, evacuation was sometimes incomplete and patient had to experience labor pains but it had lower complication rate. D&C was easier in medical management group. Patient acceptability was more for medical group.

Conclusion: Surgical management has a high success rate but its complications are more as compared to medical management. Surgical evacuation as first line treatment option is only suitable for a woman who does not wish to undergo labor discomfort .Medical termination is easier to manage, more natural, associated with least complications and more acceptable by the patients but its success rate is slightly less as compared to surgical intervention. Hence each patient should be given the chance of medical termination for at least two days and if she does not expel products of conception spontaneously during this time, then only surgical evacuation should be done.

Key words: Misoprostol, D&C, bleeding, fever, vomiting, labor.

Introduction

1rst trimester missed abortion is loss of viability of the fetus before 13 weeks of gestation. Proximately one in four women experiences an early pregnancy failure during her life time.[1,2] Previously treatment of missed abortion before 13 weeks was either expectant or surgical with dilatation and curettage. Surgical treatment requires proper sterilization and operation theater facilities and is reported to be associated with many complications including cervical trauma, cervical incompetence, perforation of the uterus, endometritis and complications of anesthesia[1]. In addition, long term complications of dilatation and curettage include Asherman syndrome, subfertility, tubal damage and pelvic pain.[1] Expectant management can avoid complications of surgical management but it has low success rate in missed abortion. The interval from pregnancy failure to spontaneous expulsion is unpredictable and may turn out to be longer than 4 weeks, the uncertainty and anxiety associated with long duration often makes expectant management unacceptable to the patient with the introduction of misoprostol for induction of labor in missed abortion, medical management has become another effective treatment option.[3]

Misoprostol is oral synthetic prostaglandin E1.It is derivative of prostanoic acid.[1] It is used as a potent agent for induction of labor and postpartum hemorrhage. It is easily available, cheap, easy to administer and therefore easily accepted by the patients. Complications, efficacy, safety and acceptability of misoprostol are in the process of trials.[3-5] There is a risk that this management may result in pain, bleeding, and the need for emergency surgical evacuation, an increase in induction abortion time, and also an increase in the analgesia. Different dosage regimens are being tried to find out its relative effective dose without side effects. This study demonstrates a comparison of efficacy and safety of medical vs. surgical management in a substantial number of pregnant women with missed abortion.

Material and Method

This study was conducted at lady Willingdon Hospital Gynae and Obs unit II for 2 years (from Dec 2012 to Nov 2014).Inclusion criteria were the women with missed abortion and gestational age less than 13 weeks with no biparietal diameter on USG and who were willing to take part in the study . The diagnosis of missed abortion and gestational age were confirmed by transabdominal departmental scan. The exclusion criteria were women with severe lower abdominal pain and contraindications to misoprostol use like hepatic or renal failure. One hundred and thirty women fulfilled the criteria of the study and gave consent to participate in the study. They were admitted in hospital and their counseling was done about the success rate and complications of both surgical and medical methods.

Their choice of treatment option was also inquired. The maternal age, parity, gestational age, history of previous C/S, miscarriages and bleeding was noted. Baseline investigations like blood group and hemoglobin percentage were performed and blood was arranged for all patients Fifty-five women (n = 55) were selected randomly to undergo surgical management with dilatation and curettage (D&C) and 75 women to receive medical termination. For the first group, the evacuation was done in operation theatre under general anesthesia with preoperative preparation and overnight fasting. Medical termination was done with tab misoprostol 400**µ**gm through oral route thrice a day for 2 days. Surgical evacuation was done if products of conception were not expelled completely during 48 hours. Antibiotic cover was given in both medical as well as surgical treatment groups as there was risk of infection with both management options. Patients of surgical group were given preoperative antibiotic cover with inj ceftrioxone 1gm IV stat while post evacuation antibiotic cover was given to participants of both groups. Anti-D immunoglobulin was given for Rh-negative women.

Statistical analysis

The data were analyzed using SPSS 20 package. The continuous variables were presented either as mean ± SD or as percentages.

Independent t-test was applied to compare the age difference between the groups. P value was calculated to assign results as significant(S) or non-significant (NS). Percentage, $\chi 2$ or the Fisher's exact test was used for nominal data to find significance of results.

Results

A total of 130 patients with missed abortion were selected for study There was significant difference of age among participants of each group with wide range of 18 to 32 years. . Majority of patients were primigravida (PG) in both groups. The range of gestational age was between 5 to 12 weeks. Most of the patients in both groups were between 8-12 weeks gestational age. Chi-square test was applied on other characteristics of study population. There was no significant difference in number of patients with previous history of missed abortion. In both groups women with previous cesarean sections and mild vaginal bleeding were included. In both surgical and medical management groups, patients were hospitalized for 72 hours. There was a significant difference between the results. Surgical management was done as elective procedure and it was successful in 100% of cases with no need to repeat the procedure. Medical management also achieved success in more than half cases (69.33%) Surgical management was found associated with postoperative nausea and vomiting in about one half cases. Misoprostol, although is being theoretically associated with side effects of vomiting and nausea had not a single case of these problems. In surgical group, 18% of cases had postoperative pyrexia while none of the patients had fever in medical management group. There was only minimal bleeding in medical management group even in cases which expelled products of conception incompletely and had a surgical evacuation later on. The patients with surgical management had a significant bleeding in 4(7%) cases at the start of procedure with need for blood transfusion .Patients with previous C/S had more bleeding during D&C as compared to other participants of surgical group. One patient with previous 1C/S (2%) even had suspicion of ruptured uterus due to excessive bleeding during D&C and her hysterectomy was carried out due to failure to stop bleeding. All the patients who had failed medical treatment or incomplete evacuation were subjected to dilatation and curettage after 48 hrs of induction. Cervical dilatation was found to be much easier in medical management group as compared to surgical group. The response to induction was slow initially and only 2 (2.6%) patients expelled products of conception in the first 24hours (hrs) but expulsion rate increased as induction abortion interval increased and more doses of misoprostol were administered as is shown in **fig-1**. The participants were well informed before the treatment that purpose of induction was to start labor pains and deliver products of conception naturally.

Furthermore in case of incomplete evacuation, D&C had to be done.

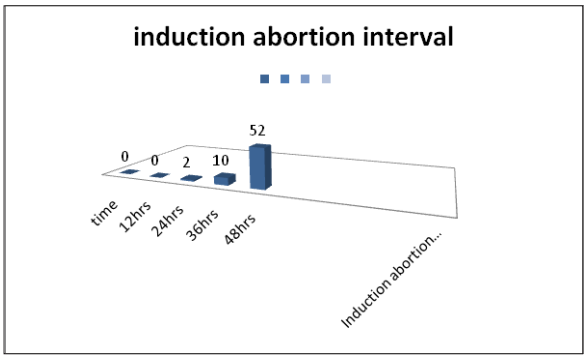

Fig-1: Induction abortion interval.

The acceptability of patients was quite high for medical group. Labor pains were experienced by 63 (84%) participants of medical group. 52 (69%) women had complete evacuation. Only 2 (2.6%) patients of medical group demanded for analgesia and 11(14.6%) patients required general anesthesia for surgical evacuation. On the other hand all the patients of surgical group had their evacuation under general anesthesia.

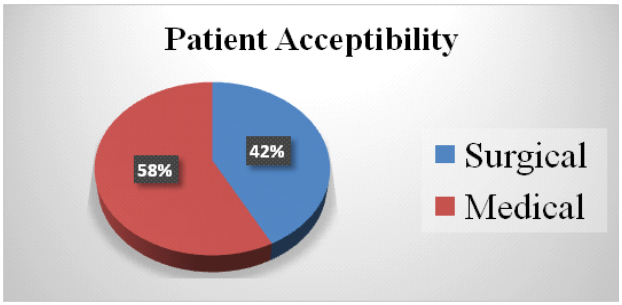

Fig-2: Patient acceptability.

Table-1: Study population (t Test).

Characteristics of Participants (n=130) Mean age (range 18-32 years)	Medical Management (n=75)	Surgical Management (n=56)	P-Value
Parity	PG n=45 (60%)	PG n=30 54.5 (4%)	1.9
	MG n=30 (40%)	MG n=25(45.456%)	p>0.5
Gestational age	5-8 weeks n=15	5-8 weeks 14	p>0.5
	8-12 weeks n=60	8-12 weeks 41	p>0.5
Mean gestational age	7.40±1.208	7.18±1.348	p>0.5

Table-2: Study population(Chi-square test)

Characteristics of Participants (n=130)	Medical Management (n=75)	Surgical Management (n=56)	Chi-Square Test
Previous history of missed abortion previous C/S	10	08	p>0.5
	Prev 1 C/S n=5	Prev 1 C/S n=4	
	Pre 2 C/S n=2	Pre 2 C/S n=4	p>0.5
Bleeding	13	15	p>0.5

Table-2: Outcome of medical and surgical management.

Outcome Measure	Medical Management No of Patients	Surgical Management No of Patients	Chi-square test
Success rate	52 (69.33%)	55 100%)	p<0.5
Incomplete evacaution	11 (14.67%)	None (0%)	p<0.5
Labor pains	63 (84%)	None (0%)	p<0.5
Analgesia and anesthesia	2 (2.67%)	56 (100%)	p<0.5
Vomiting	None (0%)	30 (54.54%)	p<0.5
Fever	None (0%)	10 (18.18%)	p<0.5

Post evacuation lower abdominal pain	2 (2.67%)	15 (27.27%)	p<0.5
Excessive Bleeding	None (0%)	20 (36.36%)	p<0.5
Need for blood transfusion	None (0%)	20 (36.36%)	p<0.5
Cervical trauma	None (0%)	2 (3.64%)	p<0.5
Uterine trauma	None (0%)	1 (1.82%)	p<0.5
Cervical dilatation	Easy	Difficult	
Patient acceptability	75 (58%)	55 (42%)	p<0.5

Discussion

The results of this study go with many international studies in favor of medical management.[6,7,8] The success rate of misoprostol was lower in this study as compared to international studies.[6,7] Possible reason for this low success rate was shorter induction time, lower dosage of the misoprostol and oral route of drug administration.

Risks of medical therapy included incomplete miscarriage and failure of medicine to work in some cases. Patients were informed about the possible risk of failure with medical management but still most of the patient's favored medical termination and to undertake the risk. Our study demonstrated that 75 patients favored medical termination vs. 55 for surgical evacuation. Several studies have found that most women will choose the medical option because it is non-invasive and safe.[9,10]

The infection rate associated was higher in surgical group. This was the case despite the fact that patients with surgical group were given preoperative antibiotics and a stronger broad spectrum antibiotic cover as compared to medical group .This finding agreed with the other study that showed medical termination may have a lower infection risk as compared to surgical evacuation.[11]

Misoprostol related side effects such as nausea, vomiting, and diarrhea were not observed in this study but they were present in other studies where higher and more frequent doses of misoprostol were used[11,12]. The excess postoperative nausea and vomiting in surgical group may be due to drugs of anesthesia and antibiotic cover. A lot of studies support medical management for first trimester missed abortion to avoid the risk of infection, trauma, and anesthesia.[12,13]

In the literature the evidence is growing for the safety of misoprostol[14,15,16]. Overall incidence of surgical complications was higher in this study including one case of emergency hysterectomy due to intractable bleeding. Many other international studies state that there are chances of cervical and uterine trauma due to D&C.[1,9,11]

Number of patients with hemorrhage and blood transfusion in surgical group was also higher in this study. This may be because patients with previous c/s were included in this study. In medical evacuation group no case had cervical laceration, perforation or required blood transfusion. This favorable finding documents the safety of the medical management.

Benefit of medical management was that work load of theater was reduced as more than ½ cases had complete medical evacuation, even patients of failed medical management and of incomplete miscarriage had a benefit that they were easier to dilate and bleeding was minimal. This point is esp. protective in patient with prev c/s where forcible dilatation against a tightly closed cervix can result in uterine rupture[17,18].

Conclusion

In cases of first trimester missed abortion, medical management with misoprostol is a much safer option as compared to surgical management. It avoids uterine instrumentation, pelvic infection and rupture of previous C/S scar which are observed complications of dilatation and curettage. It is also more suitable for medically unfit patients who cannot tolerate general anesthesia.

Medical management proved to be more successful in missed abortion with longer induction abortion interval. Side effects like nausea and vomiting which are being associated with misoprostol proved to be theoretical and have not been observed in this study. The risk of excessive bleeding was not there during the drug intake whether products of conception had been expelled completely or not. So patients with missed abortion can be safely treated even for one week which will increase success rate. However in a few patients, medical treatment failed. Women with complete expulsion do not require any further treatment and they should be sent home after counseling about cause of their missed abortion. Surgical management should be opted in cases of

incomplete evacuation on USG or failed medical treatment.

Surgical management has a high success rate but its complications are more as compared to medical management. Surgical evacuation as first hand treatment is only suitable for women who do not wish to undergo labor discomfort .Medical termination is easier to manage, more natural, associated with least complications and are more acceptable by the patient as first line management . Hence each patient should be given the chance of medical termination for at least two days to one week and if she does not expel products of conception spontaneously during this time then only surgical management should be done.

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