Volume : 2 | Issue : 12 | Dec 2013 • ISSN No 2277 - 8160

Research Paper | Medical Science

A Prospective Clinical Study of 100 Cases of Early Termination of Pregnancy (Upto 8 Weeks) by Manual Vacuum Aspiration Technique

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ABSTRACT

Aims and objectives: We studied the outcome, safety, efficacy, complications and acceptance of manual vacuum aspiration (MVA) for early termination of pregnancy (Up to 8 week).Method: 100 pregnant women with gestational age of up to 8 week seeking MTP were subjected to MVA. Results: Overall MVA resulted in complete abortion in 98 (98%) cases. The incidence of immediate complications is 2%. 1% women had anaesthetic complication in the form of allergy to lignocaine. 1% woman had haemorrhage (expected blood loss more than 150 ml). The incidence of delayed complication is 5%. 2%women had incomplete abortion and 3% women had infection. There were no mortality or major complications and all the minor complications were easily treated. Majority (94%) of the women were very satisfied with MVA and most (78%) of the women reported that they would like to undergo MTP by MVA if the need would arise in the future.

Conclusion: Manual vacuum aspiration for early termination of pregnancy (up to 8 weeks) is a safe and effective method with very low rate of complications and is acceptable to majority of the women.

KEYWORDS : First trimester termination of pregnancy; Manual Vacuum Aspiration

INTRODUCTION-

Unwanted pregnancy has been a problem of mankind from time immemorial. Worldwide, every year, approximately 40 million abortions are induced and approximately 10-22 million of them are unsafe abortions[1].Unsafe abortions contribute to about 13% maternal deaths in India[2]. For every woman who dies from unsafe abortion, there are many more who suffer from serious injuries and permanent disabilities. So there is an unmet need for a safe, effective and acceptable method of early termination of pregnancy.

There are various medical and surgical methods for early termination of pregnancy. The primary surgical methods of uterine evacuation are dilatation and curettage and electric vacuum aspiration. In dilatation and curettage, a metal curette is used which causes much blood loss and carries a risk of perforation of the uterus. Though electric vacuum aspiration has low complications rates and requires less resource and fewer staff, it cannot be used in rural areas where power supply is erratic.

MVA is a surgical method of early termination of pregnancy which uses a hand held vacuum syringe and flexible plastic cannula. The concept of MVA has evolved from that of menstrual regulation and has recently elicited considerable scientific interest as a safe method of first trimester MTP.When one considers the drawbacks of traditional method of surgical abortion, MVA seems to be a promising method which can be practiced even in rural areas where the access to medical facilities are limited, high tech equipment are not available, power supply is erratic and maintenance of instruments is not up to the mark[3]. The Government of India has approved the use of MVA for termination of pregnancy up to 8 weeks gestation. In the present study, we carried out a clinical study of early termination of pregnancy up to 8 weeks by MVA.

METHOD

This is a prospective study undertaken in 100 patients seeking MTP in the reproductive age group with a history of less than or equal to 8 weeks gestation, attending Obstetrics and Gynaecology OPD of Navodaya Medical college Hospital, Raichur from 2010 April to March 2011. Institutional ethical committee approval was taken.

Inclusion criteria

Pregnant women seeking early termination of pregnancy with gestational age < 8 weeks whose pregnancy is confirmed by clinical examination and urine pregnancy test.

Exclusion criteria

Pregnant women with Hb < 8 gm%, gestational age > 8 weeks, ectopic pregnancy, pregnant women with cardiovascular or other serious medical disorder.

Pre-procedure assessment included history taking**,** general & systemic examination**,** pelvic examination and laboratory investigations. The Lab investigations were Hb%, Blood grouping and Rh typing, Urine for albumin, sugar and microscopy, Urine pregnancy test, USG where necessary.**Pre-abortion counselling** done for all patients. After explaining the procedure to the patient, an informed written consent was taken. The woman fulfilling the inclusion criteria are subjected to termination of pregnancy by MVA technique on OPD basis. Inj tetanus toxoid is given if patient is not immunized earlier. Prophylactic antibiotics are given.

Operative steps-

An intravenous injection of 0.6 mg atropine and 10mg diazepam was given. Cervix was cleaned by antiseptic lotion and paracervical block is given using 10 ml of 1% lignocaine at 4 and 8'O clock position. An appropriate sized cannula is introduced into uterine cavity and prepared MVA syringe is attached.MVA procedure is carried out. Completion of the procedure is indicated by following signs-

1. Red or pink foam and no more tissue are seen in the cannula.
2. A gritty sensation is felt as cannula passes over uterus
3. Uterus contracts around the cannula.

Evacuated material was inspected for chorionic villi.Occurence of various complications was noted. Patients were discharged after 4 hrs of observation after advising an oral antibiotic and analgaesic.Post abortion contraceptive advice was given. They were asked to come for follow up after 1 week or to report immediately if there is excessive bleeding, severe pain in abdomen and fever. During follow up after 7 days;

1. Patient was enquired about excessive bleeding, fever and pain abdomen
2. Vital signs were checked per abdomen and pelvic examination was done

3. Following complications were looked for

A. Incomplete abortion-was diagnosed when there is history of prolonged bleeding per vagina, bulky uterus on pelvic examination. In case of doubt regarding completeness of evacuation, pelvic USG can be done and patients with incomplete abortion are subjected to re-evaluation of uterus using D&C on OPD basis. B.Infection-Presence of fever foul smelling vaginal discharge and uterine tenderness are evidence of infection. This was treated with broad spectrum antibiotics.

Assessment of outcome of MVA-Successful outcome was defined as complete evacuation of the products of conception without the need for re-evacuation. Unsuccessful outcome-This comprised of incomplete abortion and continuation of pregnancy.

Safety and efficacy of MVA-The safety was assessed in terms of complications which women developed during and after the MVA procedure. Efficacy was assessed in terms of ability of MVA procedure to cause complete evacuation of uterus.

Degree of pain-The degree of pain was categorised as minimal, moderate and very painful which they felt during the procedure

Acceptability of MVA-Women was enquired regarding their satisfaction about MVA. They were asked to report their experience as fair, good and excellent. They were asked whether they would prefer to undergo MVP by MVA or they would choose other methods of the need would arise in the future. At the end of the study, data obtained is accrued in the performa specially designed for the study and was analysed.

RESULTS

A total of 100 pregnant women with gestational age up to 8 weeks underwent termination of pregnancy by manual vacuum aspiration. Table 1 shows distribution of cases in relation to age, gravidity, and period of gestation. Majority of woman (48%) were in the 20-24 years age group. Mean age of cases is 23.85 years. None of the women were primigravidas, majority of the women (51%) were third gravid. Maximum no of cases were of 8 the week of gestation i.e.73%.Mean gestational age is 7.46 weeks. This shows lack of awareness for early termination of pregnancy.

Table 1. Baseline characteristics

Parameter	Range	Percentage	Mean
Age in years	20-24	48	23.85+/-3.70
	25-29	46	
	30-34	03	
	35-39	03	
Gravidity	1	0	
	2-4	97	
	>4	3	
Period of gestation in weeks	6	27	7.46+/-0.89
	8	73	

Table2 shows the success rate of MVA.Out of 100 women MVA resulted in complete abortion in 98% women and 2% women had incomplete abortion and continuation of pregnancy occurred in none. Success rate of MVA is 98% and the difference is statistically significant using Z test

Table 2.Success rate

Result	No of cases	%	Difference in rate	Standard error of difference	Statistical significance
Complete abortion	98	98%	96	1.9799	Z=3.44 P<0.05 Statistically significant
Incomplete abortion	2	2%			

Complications are listed in Table 3.Anaesthetic complication occurred in 1 women (1%) which was treated with injections of chlorpheniramine maleate and dexamethasone.Haemorrage i.e. blood loss >150ml occurred in 1 woman (1%) which was treated with i.v.methargine.Blood transfusion was not necessary. Incomplete abortion occurred in 2(2%) women which were managed with repeat evacuation of uterus. Infection occurred in 3(3%) women which were treated with broad spectrum antibiotics. Overall complication is observed in 7 cases. After the procedure, women were asked to comment on degree of pain during MVA.65women (65%) said there was minimal pain, 30(30%) said pain was moderate and only 5(5%) said MVA was very painful. Out of 100 women 69 women(69%) women were very satisfied with MVA.They said it was excellent ,25% said it was good and 6(6%) women quoted it as fair.Among 100 women 78(78%) said they would prefer to undergo MTP by MVA in future if the need would arise.22(22%) women said they would choose other methods of MTP.

Table 3. Immediate and delayed complications

Immediate complication				
Complication	No. of cases	Proportion	Standard error of proportion	95% confidence interval
Anesthetic complication	01	0.01	0.010	0.002 to 0.054
Vasovagal attack	-	-	-	-
Cervical injury	-	-	-	-
Uterine perforation	-	-	-	-
Haemorrhage	01	0.01	0.010	0.002 to 0.054
Blood transfusion	-	-	-	-
Hospitalization	-	-	-	-
Total	02	0.02	0.014	0.006 to 0.070
Delayed complication				
Complication	No. of cases	Proportion	Standard error of proportion	95% confidence interval
Incomplete Abortion	02	0.02	0.014	0.006 to 0.070
Infection	03	0.03	0.017	0.010 to 0.085
Continuation of pregnancy	-	-	-	-
Total	05	0.05	0.022	0.022 to 0.112
Overall complications	07	0.07	0.026	0.034 to 0.137

Discussion

According to Shah[4] evolution of MVA dates back to 1971 where Karmann and Potts reported on uterine aspiration with hand held syringe as vacuum source and flexible plastic cannula. It was in 1980's that Karmann and Wilson revolutionized the structure and function of MR syringe and in a short span of one decade the double valve MVA kit conquered centre stage.

MVA is a simple, safe and effective method of termination of pregnancy. The judicious use of MVA comes with a promise to make early abortions safe and easily accessible to women. The use of MVA for early pregnancy termination results in complete and safe termination as demonstrated by previous studies and confirmed by results presented here.Westfall J M et al[5] studied MVA on 1769 pregnant women.MVA resulted in complete abortion in 1961 women, so success rate of MVA is 99.5%.Success rate in our study was 98%which was comparable with the study done by Goldberg[6] (97.8%), Das Vinita[7] (96.9%), and Goswami sebanti[3](98%). As reported by Westfall J M et al incidence of immediate complications was 1.91%,one woman (0.005%) had uterine perforation and 33(1.86%) woman had haemorrhage (blood loss>250ml). Thonneau P et al[8] involved 858 women in their study on MVA ,the incidence of immediate complications was 1.7%.The incidence of im-

mediate complications in our study is 2%.one women had anaesthetic complication in the form of allergy to lignocaine and 1 woman had haemorrhage(estimated blood loss>150 ml).This is comparable to the study done by Das Vinita et al on 194 pregnant women. The incidence of immediate complication was 1.03%, 2 women had haemorrhage.

In our study , none of the woman had uterine perforation and none of the patient needed blood transfusion or hospitalization.Hemlin J [9] et al involved 91 women in their study and showed that incidence of delayed complication was 4.39%,2women (2.19) had incomplete abortion and needed recurettage. 2 (2.19%) women had infection. This is comparable to our study. In our study the incidence of delayed complication was 5%, 2% women had incomplete abortion and 3% had infection. The incidence of delayed complication in study done by Das Vinita et al is 3.61%, 3.09%women had incomplete abortion and 0.52% women had infection.

In our study 94% women found MVA as an acceptable method of MTP. Studies done by Hammoda et al [10] showed that 98% women were satisfied with MVA and 86% women said they would recommend it to their friends.80% women expressed that they would prefer to undergo MTP by MVA if the need would arise and 20% preferred to choose another method. In our study 78% women said they would prefer to have MTP by MVA in future and 22% women said they would choose another method.

CONCLUSION

Unwanted pregnancy is a social stress in all societies. Before the MTP act, unwanted pregnancy was managed by resorting to illegal abortion. It is concluded by the present study that MVA is a safe, effective and acceptable method of early termination of pregnancy (upto 8 wks) and has very few complications. Its nondependence on electricity is a great asset in developing countries especially in rural areas.

The simplicity and safety of MVA should not lull one into complacency. It is not free from usual complications like missing an ectopicpregnancy, haemorrhage, uterine perforation, failure of the procedure, infection etc.Meticulous attention to sterilization of the equipment, use of no touch technique, a vigilant eye on blood loss, looking out for uterine perforation, inspection of material sucked from the uterus and adequate follow up care are absolutely mandatory and cannot be dispensed with.

MVA can expand women's access to safe abortion services, ultimately reducing maternal mortality and morbidity throughout the world.

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