

MANUAL VACUUM ASPIRATION- WALK IN AND WALK OUT PROCEDURE

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Abstract -

Objective -

To prove the efficacy, safety & simplicity of MVA with basic infrastructure.

Method -

This prospective study was conducted since January 2010- December 2012. Patients included in the study were up to 12 weeks of gestation who underwent MVA using double valve MVA syringe.

Results -

Procedure was done at OPD; time required was 10-15 min. neither general anesthesia nor sedation was required. Efficacy of procedure was 99%. Incomplete uterine evacuation was seen in 2 cases. The procedure was tolerated by all the patients. Patients were discharged within 1- 1.5 hrs.

Conclusion -

MVA is safe, simple, effective method of 1st trimester MTP with minimal surgical complication, this is a walk in & walk out procedure.

Key words : MVA, abortion

Introduction -

Early pregnancy failure is a major public health problem throughout the world. Although approximately 15% of all pregnancies end in spontaneous miscarriage; there are also an estimated 46 million induced abortions annually. Many of these are performed illegally in unsafe situations resulting in approximately 78000

deaths annually worldwide, with the majority of these deaths occurring as a result of septicemia & haemorrhage. The current treatment of choice in the first trimester is manual vacuum aspiration. Manual vacuum aspiration is a simple, safe procedure that can be used for first trimester MTP & that in many cases can be used as an alternative to Dilatation & Evacuation (D & E) a surgical procedure that required facilities with operating room and electric suction whereas in MVA no anesthesia, no electric suction is required.^[1] Manual vacuum aspiration (MVA) is a fast and safe way to empty the womb using large cannula. It can be used:

1. To regulate monthly bleeding.
2. To end an unwanted pregnancy.

With double valve version of the syringe and 10mm cannula manual vacuum evacuation of uterus may be possible upto 12 weeks of pregnancy. This is done as an OPD procedure under para-cervical block. This study was conducted to assess the safety & efficacy of MVA as a method of first trimester abortion.

Methodology -

200 women who presented to PDVVPF's hospital, Ahmednagar with pregnancy up to 12 weeks of gestation requiring termination for various reasons were included in present study. Dispersible diclofenac sodium 50mg was given with sips of water half hour before in multigravida & one hour before in primigravida & previous LSCS patients. Tab. Misoprostol 200 µgms was kept in posterior fornix after moistening it with savlon 30 min. before procedure in multiparous women & 1 hr before procedure in primigravida & prev LSCS patients. Inj. Atropine 0.6 mg & T.T. 0.5 ml was given im half hour before. Patients were given lithotomy position and painting and draping was done. Vacuum of 660 mm of hg was created in 60 ml double valve mva syringe. Uterus was evaluated by bimanual examination. Paracervical block was given with 1% xylocaine at 4 o'clock & 8 o'clock. Using no touch technique the cannula was introduced through cervix towards the fundus, from no. 4 onwards up to the size of period of gestation. The charged syringe was attached to



cannula & pinch valve was released allowing the vacuum to get transferred to the uterine cavity. Content of the uterus were evacuated by using rotator or back and forward movement of the cannula. Appearance of red/pink foam or bubbles, absence of more products getting aspirated, a gritty sensation as the cannula passes over the uterine walls, a feel of the uterus contracting around the cannula were considered as a signs of completeness of the procedure. The evacuated material was inspected for chorionic villi. 5 cases of more than 10 weeks of gestation required curetting of the uterus at the end of procedure since completion of procedure was in doubt.

The average time taken for procedure was 10-15 min.

Patients were discharged within hour post-MVA, if they were clinically well, hemodynamically stable, with minimal bleeding and pain, after advising oral antibiotics & analgesics. They were asked to come for follow up after 2 weeks & again after the menstrual period. All of them were given the family planning advice on discharge.

Observation & Results -

Table no.- 1 Distribution according to age

Age (years)	No. of cases	Percentage
18-20	85	42.5
21-25	50	25
26-30	40	20
31-35	20	10
>35	5	2.5
Total	200	100

Table no. 1 – shows maximum no. of women 85 i.e. 42.5% belonged in age group of 18-20 yrs. 50 i.e. 25% cases are of age group 21-25 yrs, 40 i.e. 20% belonged to 26-30 yrs, 20 i.e. 10% belonged to 31-35 yrs & only 5 i.e. 2.5% belonged to > 35 yrs.

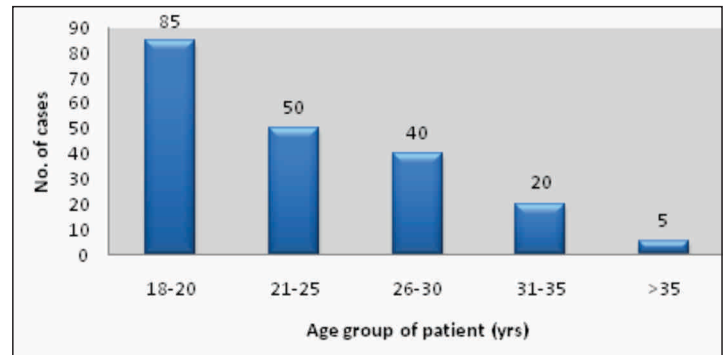


Table no. 2- Distribution according to parity

Parity	No. of cases	Per-centage
Nullipara	50	25
Para I (Previous lscs 40 cases)	90	45
Para II	50	25
More than 2	10	5
Total	200	100

Table no. 2 – shows maximum no. of women 90 i.e. 45% were para I, 5% belonged to parity of more than 2.

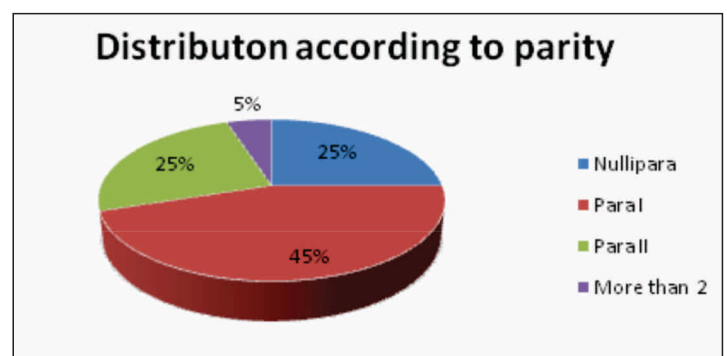


Table no. 3- Distribution according to gestational age by LM

Age (weeks)	No. of cases	Per-centage
< 6	142	71
7-6	24	24.5
10-12	99	4.5
Total	200	100



Table no. 3 – shows 71% women were in gestational age group less than 6 weeks and 24.5% women were having gestational age group 7-9 weeks & only 4.5% women were having gestational age group 10-12 weeks.

Table no. 4 – Success rate

State of abortion	No. of cases	Percentage
Complete	198	99
Incomplete Total	02	01
Total	200	100

Table no. 4- shows complete abortion rate was 99%. Only 1% women had incomplete abortion.

According to our protocol MVA is offered as a treatment option for gestation up to 12 weeks. Complete abortion rate was 99%, only 1% women had incomplete abortion. Most of the women i.e. 99% reported procedure as acceptable,^[5] complained of pain in lower abdomen of which for 2 patients pain was enough to disapprove the procedure if required in future. All patients were discharged within 1 hour of procedure making it an hour care surgery.

Discussion -

Vacuum or suction aspiration uses aspiration to remove uterine contents through the cervix. It may be used as a method of induced abortion, a therapeutic procedure used after miscarriage, or a procedure to obtain a sample for endometrial biopsy. The rate of infection is lower than any other surgical abortion procedure at 0.5%.^[2] Some sources may use the terms dilation and evacuation^[3] or "suction" dilation and curettage^[4] to refer to vacuum aspiration, although those terms are normally used to refer to distinct procedures.

Vacuums as a means of removing the uterine contents, rather than the previous use of a hard metal curette, was pioneered in 1958 by Drs Wu Yuntai and Wu Xianzhen in China,^[5] but their paper was only translated into English on the fiftieth

anniversary of the study that "ultimately led to the technique becoming the world's commonest and safest obstetric procedure".^[1]

In Canada, the method was pioneered and improved on by Henry Morgentaler, achieving a complication rate of 0.48% and no deaths in over 5,000 cases.^[6] He was the first doctor in North America to use the technique, which he trained other doctors to use.^[7]

Dorothea Kerslake introduced the method into the United Kingdom in 1967 and published a study in the United States that further spread the technique.^{[1][8]}

Harvey Karman in the United States refined the technique in the early 1970s with the development of the Karman cannula, a soft, flexible cannula that avoided the need for initial cervical dilatation and so reduced the risks of puncturing the uterus.^[1]

Clinical uses

Vacuum aspiration may be used as a method of induced abortion, as a therapeutic procedure after miscarriage, to aid in menstrual regulation, and to obtain a sample for endometrial biopsy.^[9] It is also used to terminate molar pregnancy.^[10]

When used as a miscarriage treatment or an abortion method, vacuum aspiration may be used alone or with cervical dilation anytime in the first trimester (up to 12 weeks gestational age). For more advanced pregnancies, vacuum aspiration may be used as one step in a dilation and evacuation procedure.^[11] Vacuum aspiration is the procedure used for almost all first-trimester abortions in many countries.^[9]

Procedure-

Vacuum aspiration is an outpatient procedure that generally involves a clinic visit of several hours.^[1] The procedure itself typically takes less than 15 minutes.^[2] Suction is created with either an electric pump (electric vacuum aspiration or EVA) or a manual pump (manual vacuum aspiration or MVA). Both methods use the same level of suction, and so can be considered equivalent in terms of effectiveness and safety.^[11]



The clinician may first use a local anesthetic to numb the cervix. Then, the clinician may use instruments called "dilators" to open the cervix, or sometimes medically induce dilation with drugs [Fig. 1]. Finally, a sterile cannula is inserted into the uterus and attached via tubing to the pump. The pump creates a vacuum which empties uterine contents.^[2]

After a procedure for abortion or miscarriage treatment, the tissue removed from the uterus is examined for completeness.^[2] Expected contents include the embryo or fetus as well as the decidua, chorionic villi, amniotic fluid, amniotic membrane and other tissue.

Post-treatment care includes brief observation in a recovery area and a follow-up appointment approximately two weeks later. These would tend to include tests for infection in case any biological material wasn't properly removed.

Advantages over dilation and curettage-

Dilation and curettage (D&C), also known as sharp curettage, was once the standard of care in situations requiring uterine evacuation. However, vacuum aspiration has a number of advantages over D&C and has largely replaced D&C in many settings.^[11]

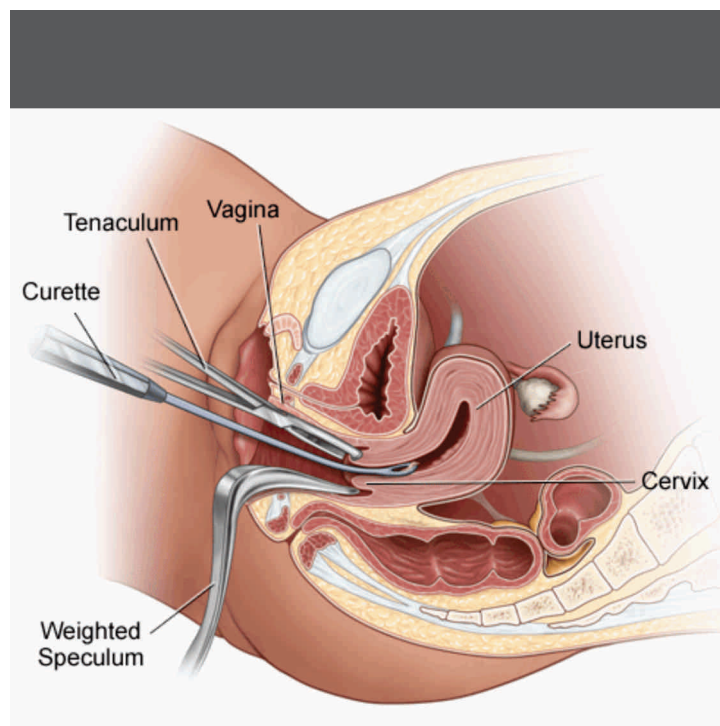
Vacuum aspiration may be used earlier in pregnancy than dilation and curettage (D&C). Manual vacuum aspiration is the only surgical abortion procedure available earlier than the 6th week of pregnancy.^[2] Vacuum aspiration has lower rates of complications when compared to D&C.^[11]

Vacuum aspiration - especially manual vacuum aspiration - is significantly cheaper than D&C. The equipment needed for vacuum aspiration costs less than a curette set. Unlike D&C, vacuum aspiration does not require general anesthesia and so can be performed as an outpatient procedure at a clinic rather than in a hospital surgical setting. While D&C is generally provided only by physicians, vacuum aspiration may be performed by advanced practice clinicians such as physician's assistants and midwives.^[11]

Manual vacuum aspiration does not require electricity and so can be provided in locations that have unreliable electrical service or none at all. Manual vacuum aspiration also has the advantage of being quiet, without the noise of an electric vacuum pump.^[11]

Complications-

When used for uterine evacuation, vacuum aspiration is 98% effective in removing all uterine contents.^[11] Retained products of conception require a second aspiration procedure. This is more common when the procedure is performed very early in pregnancy, before 6 weeks gestational age.^[2] Other complications occur at a rate of less than 1 per 100 procedures and include excessive blood loss, infection, injury to the cervix or uterus,^[11] including perforation, and uterine adhesions.^[12]



[Fig. 1]



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