Original Article

A Clinical Study on Management of Incomplete Abortion by Manual Vacuum Aspiration (MVA)

Sheuly Begum[1], Maliha Rashid[2], Arifa Akter Jahan [3]

Abstract

***Background**: Abortion is an important social and public health issue. In Bangladesh complication from unsafe abortion is one of the leading causes of maternal mortality. It is a serious health problem. World Health Organisation estimates that 14% of maternal deaths which occur every year in the countries of South Asia including Bangladesh are due to abortion. Study shows manual vacuum aspiration procedure is safe and effective in incomplete abortion. Very few clinical trials were carried out in Bangladesh to assess the safety and effectivity of manual vacuum aspiration in managing incomplete abortion.* ***Objective:** To find out the outcome of manual vacuum aspiration in the management of patients of incomplete abortion.* ***Materials and Methods:** This observational descriptive study was conducted in the department of Obstetrics & Gynaecology, Dhaka Medical College & Hospital from June to December, 2004. One hundred cases of diagnosed incomplete abortion up to 12 weeks of gestation were managed by manual vacuum aspiration during this period. A data recording sheet was designed for this purpose. Haemodynamically stable patients with no history of induced abortion and fever were enrolled.* ***Results:** Procedure time of manual vacuum aspiration was short, average duration was 7 minutes. Bleeding was minimum (20-30 mL) in 67% cases and weighted mean was 29.80 mL. Eighty three percent patients were stable during the procedure and only 3% needed blood transfusion. Nonnarcotic analgesics were used in 59% cases and 33% needed only proper counselling. Average duration of hospital stay was 2 hours. Effectiveness of the procedure was about 98% with very low post procedure complication rate (2%).* ***Conclusion:** MVA procedure is a safe and effective technique of uterine evacuation in incomplete abortion. It is quick, less expensive, effective and less painful. Hospital stay and chance of perforation of uterus is less. So this procedure should be considered by health care system in Bangladesh for improving treatment of incomplete abortion to reduce both maternal morbidity and mortality.*

***Key words:** Incomplete abortion, Evacuation, MVA*

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Introduction

Abortion is the termination of pregnancy before the period of viability, which is considered to occur at 28th week. When the entire product of conception is not expelled, and a part of it is left inside the uterine cavity, it is called incomplete abortion.[1]

Abortion is an important social and public health issue. In Bangladesh, complication from unsafe abortion is one of the leading causes of maternal mortality. The WHO estimates that thousands of maternal deaths occur every year in the countries of

1. *Assistant Professor, Department of Gynaecology & Obstetrics, Enam Medical College & Hospital, Savar, Dhaka*
2. *Former Professor, Department of Gynaecology & Obstetrics, Dhaka Medical College & Hospital, Dhaka*
3. *Associate Professor, Department of Gynaecology & Obstetrics, Kumudini Medical College & Hospital, Tangail*

***Correspondence** Sheuly Begum, Email: showshew@yahoo.com*

South Asia including Bangladesh and 14% of them are due to abortion.[2] Incomplete abortion is the commonest type met amongst women who are hospitalized for abortion complications.[3] Following incomplete abortion, various complications such as vaginal bleeding, infection, shock and even maternal death may occur. It is a major health problem that should be effectively managed with safe and appropriate procedures. It is anticipated that if postabortion care (PAC) services can be started in a systematic manner at all levels of the health care system, it would result in a significant reduction in maternal morbidity and mortality. Comprehensive postabortion care, which includes both curative and preventive measures, has three key elements:

- •gency management for complications of spontaneous or induced abortion.
- Postabortion family planning counselling and services.
- Coordination between emergency post-abortion treatment and comprehensive reproductive health care services.

Among these three key elements, first one is the most important. There are different methods used in post-abortion care (PAC). Dilatation and curettage (D & C) is the most commonly used technique in our country. It uses metal surgical instruments to empty the uterus, usually under general or local anaesthesia, or heavy sedation.[3] It is time-consuming and there is more chance of incomplete evacuation, haemorrhage and uterine perforation. It also requires operation theatre facilities and staff skilled in surgical techniques.[4] As an alternative, manual vacuum aspiration (MVA) is one of the most effective techniques of uterine evacuation in incomplete abortion.[5] This technique uses a hand-hold vacuum syringe and flexible plastic cannula. Basic MVA instrument kits contain following components.[6,7]

- Double valve 60 cc syringe with a locking valve, plunger handle, collar stop and silicone for lubricating the syringe O-ring.
- Sterile, flexible cannula with two opposing offset openings for maximum effectiveness and in six sizes, 6-10 mm and 12 mm, with a set of colour-coded adapters to fit each cannula to the syringe. It removes the contents of the uterus using controlled suction. It is safe, effective, simple and can be employed in management of incomplete abortions. WHO describes manual vacuum aspiration (MVA) as the preferred method of evacuation of the uterus.

Manual Vacuum Aspiration (MVA), a variation of vacuum aspiration is safer and less costly than other surgical procedures like sharp curettage (D & C). It is safe, effective, quick to perform, and less painful than sharp curettage and there is less chance of perforation of uterus.[5] It can be performed outside the operation theatre – the treatment room of clinic or emergency unit. The MVA procedure is brief, lasting only for a few minutes. Most patients with incomplete abortion remain comfortable during a MVA procedure without much pain. Gentle supportive treatment of the patient and use of a non-narcotic analgesic coupled with frequent verbal communication and reassurances are often sufficient.[8] So it reduces the hospital costs and save time for both patients and clinicians.[9] It is a measure which can greatly contribute to the reduction of maternal morbidity and mortality.[10]

Considering the advantages of MVA procedure as mentioned above, this technology should be considered by health care system in Bangladesh for improving treatment of incomplete abortion.[8] Till now D & C is widely practised in DMCH to manage incomplete abortion. Now, manual vacuum aspiration technique is set up in DMCH as an important component of postabortion care. We designed this study to find out the outcome of patients of incomplete abortion managed by manual vacuum aspiration.

Materials and Methods

This observational descriptive study was carried out in the department of Obstetrics and Gynaecology, Dhaka Medical College & Hospital during the period from June to December 2004. Total 100 cases of diagnosed incomplete abortion up to 12 weeks of gestation who were haemodynamically stable with no history of induced abortion and fever were included in the study.

Permission for the study was duly obtained from Ethical Committee of Dhaka Medical College. Patients were first explained about the treatment

procedure with possible outcome. Informed written consent was taken from them. A data-recording sheet was designed for recording information.

Results

In this study 100 patients of incomplete abortion were managed by MVA. Age range of the patients was 15-45 years with most of the patients (67%) being in 21-30 years age group and most of them were multiparous (35%), illiterate and of lower socioeconomic condition (69%). On contraceptive history, 66% of patients practised any form of contraceptives at sometimes, but 34% never used any contraceptive methods. Many of them (20%) had unplanned pregnancy.

Table I shows that 97% of the patients presented with per vaginal bleeding, 65% with pain in lower abdomen and 13% with passage of fleshy mass. Eighty nine percent patients were mild to moderately anaemic and severe anaemia was found in 11% cases.

Table I: Clinical presentation of study subjects (n=100)

	Number	(%)
Clinical presentation		
Per vaginal bleeding	97	65
Pain in the abdomen	65	65
Passage of fleshy mass	13	13
Anaemia		
Mild/moderate	89	89
Severely anaemic	11	11

During per vaginal examination, 79% cases had active per vaginal bleeding. Os was open in most of the cases (71%); uterus was anteverted in 79% cases and in 60% cases 9-10 week size. Product of conception was felt during examination in 53% cases (Table II).

Table II: Per vaginal examination findings (n=100)

Examination findings	Number	(%)
Active bleeding present	79	79
Status of cervical os		
Open	71	71
Closed	29	29
Size of the uterus		
Below 8 weeks	24	24
9-10 weeks	60	60
11-12 weeks	16	16
Position of the uterus		
Anteverted	79	79
Retroverted	21	21
Product of conception felt	53	53

Table III shows that the procedure time was 6–10 minutes in 59% of patients. Average duration was about 7 minutes. Bleeding was minimum (20-30 mL) in 67% cases. Most of the patients were stable during the procedure and no resuscitation was needed. Only 3% patients who were severely anaemic during admission required blood transfusion.

Table III: Procedure time, amount of blood loss, resuscitation required (n=100)

	Number	(%)
Time		
< 5 minutes	29	29
6-10 minutes	59	59
11-15 minutes	12	12
Amount of blood loss		
20-30 mL	67	67
> 30-40 mL	21	21
> 40-50 mL	9	9
> 50-60 mL	3	3
Resuscitation		
Resuscitation not needed	83	83
Fluid replacement	14	14
Blood transfusion	3	3

Nonnarcotic analgesics were used in 59% of the patients. Only 15% patients required narcotic analgesics and 33% patients were managed by only proper counselling (Table IV).

Table IV: Use of analgesics (n =100)

Analgesics	Number	(%)
No Analgesics (counselling only)	33	33
Analgesics required		
Nonnarcotic and anxiolytic (NSAID & Inj. diazepam)	49	49
Narcotic (Inj. pethidine)	15	15
Local anaesthesia (Paracervical block)	3	3

Table V shows that duration of hospital stay was short. Fifty eight per cent was discharged within 2 hours. Average duration of hospital stay was 2 hours.

Table V: Duration of hospital stay (n=100)

Time	Number	(%)
< 2 hours	58	58
3-4 hours	31	31
5-6 hours	11	11

Patients were followed up for any complications. In 98% cases there was no complications at all and only 2% patients had excessive bleeding (Table VI).

Table VI: Post procedure complication (n = 100)

Complication	Number	(%)
None	98	98
Excessive bleeding	2	2

Discussion

Incomplete abortion is the commonest type of abortions amongst women who are hospitalized for complications due to abortion. In DMCH in 2004, it was about 65.19% of total abortion cases and conforms to an earlier study done in Sylhet MAG Osmani Medical College Hospital, Sylhet, but lower than a study done earlier in urban hospitals.[5] This lower rate may be due to the fact that there are lots of private clinics around DMCH.

In our study 97% cases came with per vaginal bleeding from minimal to severe haemorrhage and 65% with lower abdominal pain, 13% with passage of fleshy mass and 67% of them with 9-10 weeks of gestation. These findings are consistent with a study in MMCH.[11]

In Bangladesh maternal mortality is about 1.94%.[12] The WHO estimates 20 million unsafe abortions annually worldwide and more than 95% of these occur in less developed countries.[13]

The total number of women attending Dhaka Medical College Hospital does not reflect the actual situation of the country, because many people go to private clinics. This is true even in case of USA where 19% women of 27-30 years failed to report their abortion.[14]

This study showed MVA is safe, effective and the procedure requires few minutes. In most of the patients (59%) procedure was completed within 6-10 minutes, 29% within 5 minutes. This corresponds with the study of Bird ST et al[15] where it was about 10 minutes. Bleeding was minimum (about 20-30 mL) in 67% cases and 30-40 mL in 21% cases. Mean blood loss was 29.80 mL and this corresponds with the study by Forna & Gulmezoglu.[10] They showed that in MVA duration of procedure was very short (6.1 minutes) with minimum blood loss (mean blood loss 25 mL). It also corresponds with the study done by Greenslade et al.[16]

During the procedure, no resuscitation was required in most of the cases (81%). Only fluid replacement was required in 16% patients and blood transfusion in 3% cases who were severely anaemic at the time of admission.

Most patients with incomplete abortion remained comfortable during MVA procedure. Forty nine percent patients were managed by nonnarcotic analgesic and anxiolytic such as NSAID, lnj. diazepam etc. A large portion (33%) was managed by only proper counselling. They just felt minimal cramping lasting for half an hour to one hour and decreased spontaneously or were relieved by oral medications. Only 3% patients needed local anaesthetics like paracervical block. This corresponds with other studies.[10,13]

In this study duration of the hospital stay was also less. Most of the patients were discharged within 2 hours, average duration was 2 hours and it corresponds with many other studies where it was shown that MVA spent 77% less time in the hospital and consumed 41% fewer resources than similarly diagnosed patients treated with suction curettage.[15-17]

It was found that MVA was quite effective. In this study effectiveness was about 98% and it corresponds with the study of Greenslade[16], Baird, Traci and Susan K Flinn[18] and Hernlin, Johan & Mollor.[19] Twelve research reports over 25 years have specially examined the effectiveness of MVA for incomplete abortion, gathering data on almost 20,000 women. In these studies, effectiveness of MVAs ranged from 95 to 100 percent.[18]

From the present study, it may be concluded that MVA procedure is a safe and effective technique of uterine evacuation in incomplete abortion. It is quick, less expensive, less painful, requires less hospital stay and there is less chance of perforation of uterus. It may also be concluded that MVA is a measure which can greatly contribute to reduce the maternal morbidity and mortality. We recommend MVA should be considered by health care system in Bangladesh for improving treatment of incomplete abortion.

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