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Original Article

MVA; A Versatile Measure for the Management of 1st Trimester Incomplete Abortion, Endometrial Aspiration and Menstrual Regulation

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ABSTRACT

Background: Abortion may be defined as any interruption or interference in the continuation of pregnancy any time before 28 wks of pregnancy characterized by abdominal pain or per vaginal bleeding or both with or without expulsion of product of conception. ***Objectives:*** *To find out the outcome of manual vacuum aspiration in the management of patients of incomplete abortion, menstrual regulation and endometrial aspiration.* ***Materials & Methods:*** *This observational prospective study was conducted in the department of Obstetrics & Gynaecology, Dinajpur Medical College Hospital and Reproductive Health Services Training and Education Programme (RHSTEP), Dinajpur from February to July 2017. One hundred cases of 1st trimester incomplete, abortion, menstrual regulation & people coming with die complain of DUB, post menopausal bleeding, infertile women with specific drug therapy were managed by manual vacuum aspiration during this period. A data recording sheet was designed for this purpose. Haemodynamically stable patients were enrolled purposively according to inclusion and exclusion criteria.* ***Results:*** *Procedure time of manual vacuum aspiration was short and bleeding was minimum. During the procedure, no resuscitation was required in most of the cases (94%). Only 6% patients required fluid replacement and 3%, cases required blood transfusion that was severely anemic at the time of admission. Average duration of hospital stay was 2 hours. Complete recovery occurred in about 98% cases with very low post procedure complication rate.* ***Conclusion:*** *MVA procedure is a safe and effective technique of uterine evacuation in incomplete abortion, menstrual regulation as well as endometrial aspiration. It is quick, less expensive, portable and less painful. Hospital stay and chance of*

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perforation of uterus is less. So, it is a promising method and can be practiced widely in rural areas where access to medical facilities are limited, high-tech equipments are not available and maintenance of instruments are not up to the mark.

Key words: *Incomplete abortion, menstrual regulation, manual vaccum aspiration.*

INTRODUCTION

Abortion may be defined as any interruption or interference in the continuation of pregnancy any time before 28wks of pregnancy characterized by abdominal pain or per vaginal bleeding or both with or without expulsion of product of conception. The number of abortions still remains considerably high ranging from 523 803 to 769 269, with an estimated 280 000 women having been treated for complications of either spontaneous or induced abortion in 2010. Complication from unsafe abortion is one of the leading causes of maternal mortality. Abortion may be classified as spontaneous and induced. Spontaneous abortion may again classified as threatened abortion, inevitable abortion, incomplete abortion, complete abortion, missed abortion and habitual abortion. Induced abortion may be classified as legal abortion (medical termination of pregnancy) and illegal or unsafe abortion. Among all this abortions; incomplete abortion is the commonest type met amongst the women who are hospitalized for abortion complications. When the entire products of conception are not expelled, instead a part of it is left inside the uterine cavity; it is called incomplete abortion. Following incomplete abortion, various complications such as profuse vaginal bleeding, sepsis, 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 post abortion 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.[2] Menstrual regulation is the induction of uterine bleeding that has been delayed upto 14 days from its anticipated date of onset[3]. It has been a part of Bangladesh's national family planning programme since 1979. Government regulations allow for MR procedures upto 10-12 weeks after a woman's last menstrual period (depending upon type of provider). Despite the availability of MR services, many women resort to clandestine abortions, some of which are unsafe.

An endometrial aspiration is one of the diagnostic tests, most frequently performed as an outpatient procedure. It allows thorough evaluation of the endometrium and can be used to diagnose or exclude certain types of endometrial disease as an outpatient procedure, e.g. hyperplasia and tuberculosis, to determine the response of the endometrium to endogenous hormones and thereby asses ovarian function including ovulation. The purpose of an endometrial aspiration is to identify the cause behind anomalous bleeding from the uterus. It is essentially a diagnostic procedure and any material obtained by it must always be submitted to histopathological and often to bacteriological study. Its indications are definite and it should never be carried out without a clear reason. Complications that can result from an endometrial biopsy include pelvic infection, perforation in the uterus, prolonged bleeding and mild cramping. Factors such as cervical cancer and infection or acute pelvic inflammatory disease can interfere with an endometrial aspiration, so women with these conditions should discuss the risks with their doctor.

Manual vacuum aspiration or MVA, a variation of vacuum aspiration is a technique for uterine aspiration. It is a

safe, relatively painless, quick to perform and cost-effective diagnostic and therapeutic means of evacuating the uterus during early pregnancy miscarriage or for evaluating the endometrium for abnormal uterine bleeding, infertility, and malignancy. It is less painful than traditional sharp curettage and there is less chance of perforation of uterus [4]. Its low cost, simplicity and portability has made it an valuable reproductive-health technology. Over 30 years of clinical research and use in more than 100 countries has shown vacuum aspiration to be safe and effective[5]. Both the World Health Organization (WHO) and FIGO recommend MVA as the method of choice for uterine evacuation in cases of incomplete abortion and induced abortion in early pregnancy [6]-

MVA was Officially introduced in 1979 to provide services of menstrual regulation (MR), the MVA/MR syringes were often used for uterine evacuation in cases of incomplete and missed abortions. In 2002, the Directorate General of Family Planning introduced the concept of postabortion care services and the use of the double-valve MVA syringe for uterine evacuation (as long as uterine volume was less than that of a 12-week pregnancy) in cases of incomplete and missed abortion. In 2007, to popularize the use of MVA for postabortion care services, the OGSB issued the following statement: "In line with the recommendation of FIGO, the WHO and other professional bodies, the Obstetrical and Gynecological Society of Bangladesh (OGSB) acknowledges the use of MVA/MVA plus as a safer alternative to dilatation and curettage for postabortion care[6]. A number of clinical meetings/seminars were conducted by the OGSB to familiarize obstetricians and gynecologists with MVA as a method of uterine evacuation. However, only relatively few clinicians performed this procedure. The following barriers to its adoption were identified: lack of training and lack of equipment. This technique uses a hand-hold vacuum syringe and flexible plastic cannula. Basic MVA instrument kits contain following components.

• 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. WHO describes manual vacuum aspiration (MVA) as the preferred method of evacuation of the uterus.

MVA can be performed outside the operation theatre - the treatment room of clinic or emergency unit. The procedure is brief, lasting only for a few minutes. Most patients remain comfortable during a MVA procedure without much pain. Gentle supportive treatment of the patient and use of a nonnarcotic analgesic coupled with frequent verbal communication and reassurances arc oflcn sufficient [7]. The complications which may occur during or after MVA procedure are incomplete evacuation, uterine perforation, cervical laceration, pelvic infection, haemorrhage, hematomctra and vagal reaction. A review of recent medical literature shows abundant references testifying increased application of MVA in 1st trimester incomplete abortion [x]. Even a large series of vaccum induced "menstrual regulation' procedures confirmed the safety of early aspiration in outpatient settings [9]. Abortion or MR is potentially a life threatening condition not only because of retention per se, but because of associated complications as haemorrhage or sepsis. These are increased in poor social circumstances due to preexisting malnutrition and anaemia[10]. In Bangladesh, most of the women belongs to poor social class and are also victim of gender discrimination. So the magnitude of problem seems to be quite high here. Manual vaccum aspirator utilization helps

to formulate a new approach for the above mentioned procedure without more complication as in other procedure.

MATERIALS & METHODS

This cross-sectional study was carried out in Department of Obstetrics & Gynaecology, Dinajpur Medical College & Hospital, Dinajpur and Reproductive Health Services Training and Education Programme (RHSTEP), Dinajpur from February, to July, 2017. 100 cases were selected purposively according to inclusion and exclusion criteria from All patients with 1st trimester incomplete abortion & people coming with the complain of DUB, Post menopausal bleeding, infertile women with specific drug therapy during the study period in the Department of Obstetrics and Gynaecology, Dinajpur Medical College and Hpspital and MR attending RHSTEP, Dinajpur. Inclusion criteria were Gestational age less than 12 wks for incomplete abortion & 6 wks for MR, Patient haemodynamically stable, No history of induced abortion and fever & For endometrial aspiration Infertility, Postmenopausal bleeding or abnormal uterine bleeding & Test the response to hormone therapy. Exclusion Criteria were Gestation>12 weeks, Uterine fibroids, Suspected ectopic pregnancy, Pelvic infection, Bleeding disorder, Acute pelvic inflammatory disease, cervical cancer. Main Outcome variables to be studied: Haemorrhage, Shock, Sepsis, Blood transfusion, Laparotomy , Dcath.Patiervts with incomplete abortion, DUB, poctmcnopausal bleeding and infertility admitted in Department of Obstetrics and Gynecology in Dinajpur Medical College and Gynecology in Dinajpur Medical College and Hospital and patients admitted in RHSTEP, Dinajpur for MR were asked for proper history. Data was collected by face-to-face interview by using a pre-design questionnaire. This is a cross sectional study. A specially designed Performa was used to record the relevant data of each patient. It contained the demographic variables such as age, socioeconomic status, gestational age at presentation, nutritional status, and maternal outcome. All the patients taken in this study were admitted in the hospital (inpatients) both in wards and in emergency rooms. All the patients included in the study was evaluated by detailed history, thorough physical examination and relevant laboratory investigations. Prior to data collection official permission was taken from the authority concerned. After explaining the purpose of the study to the respondents and obtaining verbal consent from them and as per selection criteria of the study, the researcher through face-to-face interview carried out data collection by asking questions in Bangla. The respondents was given full assurance on some ethical point of view that under no circumstances findings of the interview and other investigations was disclosed to any unauthorised person. Statistical analyses was carried out by using the Statistical Package for Social Sciences version 20.0 for windows (SPSS Tnc Chicago, Illinois, U.S.A).

RESULTS

During the study period MVA was done in 100 patients for various indications. The age range was 21-55 yrs. Among them 71% had regular menstrual cycle. 16% had oligemenorrhoea, 4% had polymenorrhagia and 7% had metrostaxis. (Table:1)

Table 1: Types of cycle

Types of cycle	Percentage
Regular menstrual cycle	71%
Oligemenorrhoea	16%
Polymenorrhagia	4%
Metrostaxis	7%

Among the 100 patients 26% had no child, 31% had 1 child and 43% had 2 or more child. (Figure: 1)

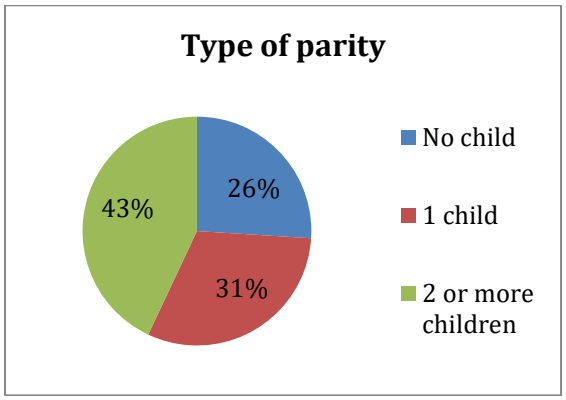

Figure 1: Type of parity

Figure 2 showed the clinical presentation of the patients. Where 37% of the cases came with per vaginal bleeding from minimal to severe haemorrhage, 13% with lower abdominal pain, 23% with passage of fleshy mass, 14% with the complain of infertility and rest of them went for menstrual regulation. (Figure: 2)

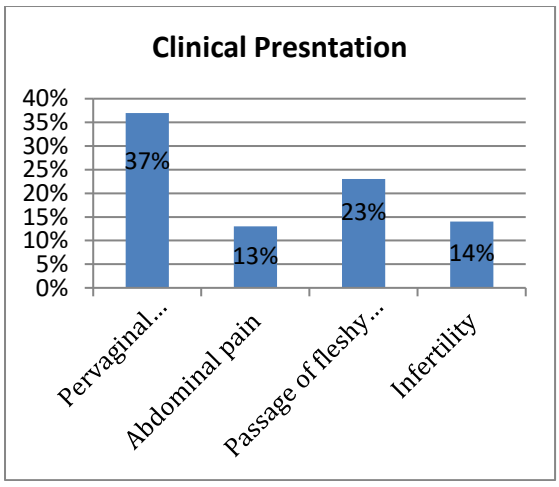

Figure 2: Clinical presentation of the patients

Among them 55% cases were with less than 8 weeks of gestation, 20% cases were non pregnant, 10% of them were 8-10 weeks of gestation and 15% of them were 11-12 weeks of gestation. (Figure: 3)

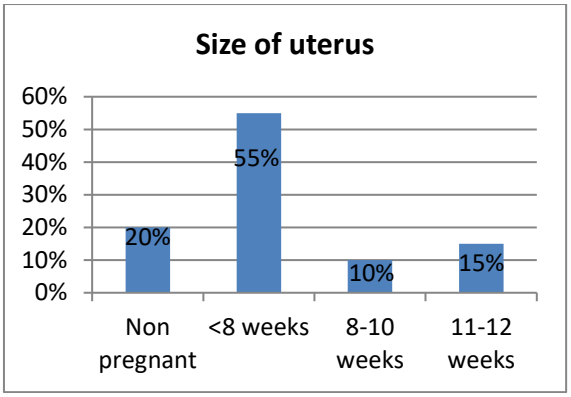

Figure 3: Patients uterus size

In 84% cases cervical OS was closed and 16% cases OS was opened. (Table: 2)

Table 2: Types of Cervical OS

Cervical OS	Percentage
Opened	16%
Closed	84%

Among the 100 patients 54% of the cases had normal HB level, 45% of the cases mild HB level and only 1% of the case had moderate HB level. (Figure:4)

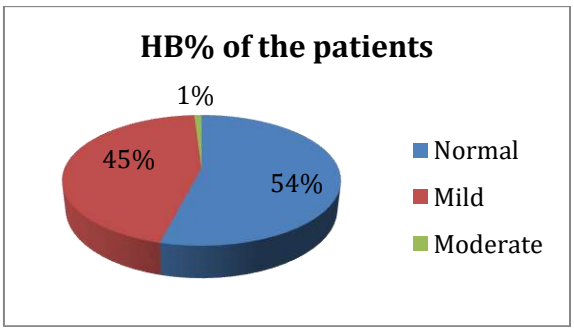

Figure 4: HB% of the patients

In most of the patients 74% procedure was completed within 5 minutes, 25% procedure completed within 5 to 10 minutes, 1% completed within 11-15 minutes. (Figure: 5)

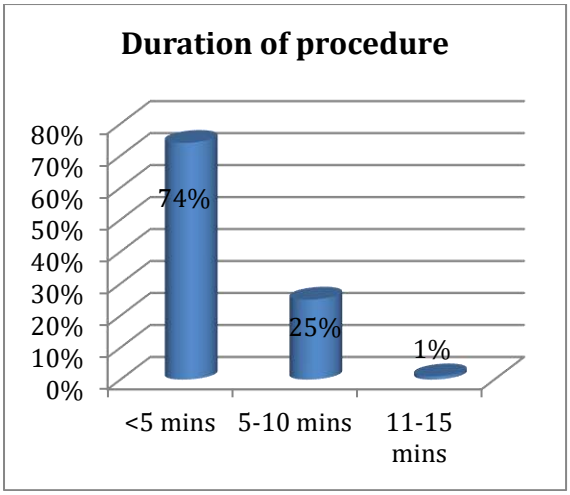

Figure 5: Duration of the procedure

Bleeding was minimum in 92% cases, in 5% cases bleeding were average and 3% cases bleeding were excessive. (Figure: 6)

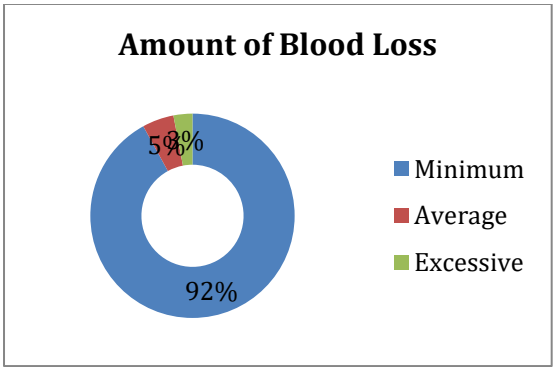

Figure 6: Amount of blood loss

Among all the patients 94% did not required any sorts of resuscitation. 6% required replacement and among this 6% only 3 required blood transfusion. 86% patients did not have any post procedure complications. Only 3% had slight bleeding and 11% had pain.

DISCUSSION

According to Shah, the evolution of MVA dates bac k to 1971 when Karman and Potts reported on uterine aspiration with hand held syringe as vacuum source and flexible plastic canula. The original single v alve MR syringe 2 lost its popularity over a period o f 5 years because of certain limitations viz., restrict! on of its use only upto 6 weeks of pregnancy and a high failure rate. It was between 1980 and 1988 that Karman and Wilson revolutionized the structure and function of MR syringe and in a short span of one decade the double valve MVA kit conquered center stage.

MVA has been used worldwide for more than 30 years and has been a safe and effective procedure for the management of early pregnancy loss. 15,16 Despite being simple, inexpensive and easy to handle tool, its use in most of the hospitals is restricted due to unfainiliarity of the clinicians with its use. The technique was introduced in our institution only recently and was new for the residents as well other faculty members who were more versed with D, E & C. A high success rate with no major complications with MVA provides evidence that the technique is safe and easy to learn.In this study 37% cases came with per vaginal bleeding from minimal to severe haemorrhage, 13% with lower abdominal pain, 23% with passage of fleshy mass, 14% with the complain of infertility and rest of them went for menstrual regulation. Among them 55% with less man 8 weeks of gestation. These findings are consistent with a study in MMCH. This study showed MVA is safe, effective and the procedure requires few minutes. In most of the patients (74%) procedure was completed within 5 minutes, 25% within 5 to 10 minutes. This corresponds with the study of Bird ST et al where it was about 10 minutes. Bleeding was minimum in 92% cases in 5% cases bleeding was average this corresponds with the study by Forna&Gulmezoglu. 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. During the procedure, no resuscitation was required in most of the cases (94%). Only fluid replacement was required in 6% patients and blood transfusion in 3% cases who were severely anaemic at the time of admission. 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. It was found that MVA was quite effective. In this study effectiveness was about 98% and it corresponds with the study of Greenslade. 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.

CONCLUSION

Incomplete abortion, menstrual regulation still remains a potentially life-threatening condition and one of the major obstetric problems in our environment. 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.

LIMITATIONS

The present study had the following limitations

1. Short study period
2. Sample technique was purposive

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