Original Article

Patient Satisfaction and Efficacy of Manual Vacuum Aspiration - A Safe Management Choice for First-Trimester Miscarriage

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ABSTRACT

Objective: To determine the efficacy of manual vacuum aspiration (MVA) and the satisfaction regarding MVA in patients presenting with first-trimester miscarriage.

Methodology: This cross-sectional survey was conducted in the Department of Gynaecology & Obstetrics, Khawaja Muhammad Safdar Medical College, Sialkot. Permission from the institutional review board was taken. The sample size was 28 as calculated by an open epi calculator. Manual vacuum aspiration was offered to all women fulfilling the inclusion criteria. A self-administered questionnaire was given to patients to assess their satisfaction scores. The primary outcome was to assess the efficacy of the procedure defined as complete uterine evacuation without the need for further treatment (medical or surgical curettage). Secondary outcomes were the safety of the procedure and related complications including uterine perforation, bleeding, and patient satisfaction. The data obtained was evaluated using Statistical Package for the Social Sciences (SPSS) version 21.

Results: The mean age in the study group was 28.4±5.4 years. The efficacy of the procedure was 92.8% & the duration of the procedure was noticed as <10 minutes in 78.6% of patients. Blood loss was less than 100 mL in 78.6% of participants. The majority of patients (85.6%) were satisfied with the procedure.

Conclusion: Manual vacuum aspiration is an efficient treatment option in terms of complete uterine evacuation, blood loss, pain during & after the procedure, and patient's satisfaction. So, MVA is an acceptable, efficient, and satisfactory alternative method in patients with first-trimester miscarriages.

Keywords: *Miscarriage. Early pregnancy. Patient satisfaction.*

INTRODUCTION

Miscarriage or abortion is defined as the natural death of an embryo before 24 weeks of gestation. It is the commonest presentation of the first trimester. The majority of miscarriages occur around 12 weeks mostly due to chromosomal abnormalities.[1] Bleeding, lower abdominal pain, and cramping are the usual symptoms of individuals with abortions or early pregnancy loss, but majority of patients remain stable. In uncomplicated pregnancy, further symptoms may vary from patient to patient. It may also include a loss or decrease or absence of pregnancy symptoms, such as decreased breast tenderness and/or nausea, and vomiting. Any patient with these symptoms must also be evaluated for ectopic pregnancy. The clinical scenarios that require treatment are of two types: missed abortion, that is, empty gestational sac or with an embryo without a fetal heartbeat, or incomplete abortion, that is, a significant amount of remains of trophoblastic tissue in the endometrial cavity. These situations are treated by different management forms, like using medications and vacuum aspiration or surgical treatment. The choice of management is based primarily on the duration of pregnancy and age. This should be determined by asking last menstrual period of the patient and confirmed by a dating scan.[2] Sizes of retained products of conception also determine the choice of treatment, along with the preferences of the patient after appropriate counselling regarding the benefits and risks of all management options. Because of this, it is essential to have a thorough clinical history, gynaecological physical examination, and ultra-sonography. Expectant management should be considered in pregnancies of less than 9 weeks or incomplete abortions without complications, allowing its natural course under observation, to confirm the complete expulsion of intrauterine contents. It is described that in a period of 7 to 14 days, in 75-85% of cases, there will be complete abortions without the need for procedures and without associated complications.[3]

There are two basic treatment options for the management of abortions, or miscarriages; medical or surgical treatment. Medical treatment is in the form of prostaglandin E1 (misoprostol) and anti-progesterone (mifepristone). Surgical intervention is in two ways; conventional evacuation & curettage (E & C) and manual vacuum aspiration. Medical management has also been used as an alternative to surgical management and the most commonly used is misoprostol.[4,5]

Surgical treatment is still an acceptable option by patients. It has few side effects like fever, hyper-sensitivity, diarrhea, etc.[6] Literature shows that both MVA and misoprostol are cost-effective and efficient methods for the termination of pregnancy, and MVA is

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as an alternative to the conventional method of E & C. Manual vacuum aspiration was used first in China in 1958. It has numerous benefits, including the ability to be performed under local anesthesia, the ability to be used instead of standard electrical vacuum aspiration, the reduction of waiting time, and a shorter hospital stay. It has been deemed a secure and effective method of handling early pregnancy loss.[7]

In Pakistan, the public health sector is overburdened due to high rates of pregnancies (3.8%), inadequate use and non-availability of contraception methods, taboos against safe abortions, lack of trained staff, and poor understanding of legislation by health care providers. Due to the above-mentioned facts, it's high time to change the paradigm from the conventional method of E & C to MVA. So, this study aimed to find the efficacy of MVA as an alternative method and the satisfaction of patients associated with this procedure.

METHODOLOGY

It was a cross-sectional study conducted in the Department of Gynaecology & Obstetrics, Khawaja Muhammad Safdar Medical College, Govt Sardar Begum Teaching Hospital, Sialkot. Before conducting the study, permission from the institutional review board (IRB) was taken. The duration of the study was 6 months after IRB approval. Non-probability sampling technique was used. The sample size of 28 was calculated by an open epi calculator.

The inclusion criteria for patient recruitment were missed miscarriage and incomplete miscarriage at gestational age (GA) <13 weeks. The patients excluded from the study were those with uterine anomaly, molar pregnancies, threatened miscarriage, and pregnancy. Patients fulfilling the inclusion criteria were selected from outdoor and emergency. Written and informed consent of patients was taken before the start of the procedure. The pros and cons of the procedure were explained to patients. Manual vacuum aspiration was offered to all women with first-trimester missed or incomplete miscarriage at GA <13 weeks. As per the protocol of The International Federation of Gynecology and Obstetrics, all women were administered 400 μg of sublingual misoprostol for cervical priming, 3 hours prior to the procedure with closed os. Manual vacuum aspiration was performed by applying local anesthesia, 10-20 mL of 1% lignocaine intracervical at 2, 4, 8, and 10 o'clock using a flexible Ipas EasyGrip Cannula attached to a 60 mL syringe (aspirator) with a double locking valve mechanism. Products of conception evacuated were sent for histopathology. Patients were kept in the labour room for 1 hour and later discharged. The primary outcome measure was to assess the efficacy of the procedure defined as complete uterine evacuation without the need for further treatment, medical or surgical curettage. Secondary outcome measures included the safety of the procedure and related complications including uterine perforation, bleeding, pain, and infection. The duration of the procedure, blood loss assessed by the aspirator in the syringe, the need for further treatment medical or surgical curettage, and clinical complications were also evaluated. A self-administered questionnaire was given to patients to assess the satisfaction levels of the participants. The questionnaire included information regarding patients' satisfaction with the procedure on their personal assessment & pain, during and after the procedure. Percentages of the response of the patients were calculated using a Likert scale. Strongly agree and agree (1 & 2) were taken as satisfied, 3 was considered as uncertain, and strongly disagree and disagree (4 & 5) as being dissatisfied.

STATISTICAL ANALYSIS

The data obtained were evaluated by using Statistical Package for the Social Sciences (SPSS) version 21. Quantitative variables like blood loss, change of procedure, uterine perforation, infection, and duration of procedure were measured as frequencies and percentages. Patients' satisfaction with the procedure and pain, during & after the procedure was also calculated as frequency and percentage.

RESULTS

Out of 28 patients, 35.7% of patients belonged to the age group 20-25 years, 21.4% to the age group 26-30 years, 28.6% to the age group 30-35 years, and 14.3% to the age group >35 years. The mean age group in the study was 28.4±5.4 years. Among the patients, three patients were primigravida, five were para 1, six were para 2, four were para 4, six were para 4, and four patients were having parity of more than 5. The mean parity of the patients in the study was para 2. Almost 12% of patients had a history of previous abortions and 16% were without any history of abortions. Regarding their past history of use of contraception, 7% were previously using contraception and 93% were not using any contraception. Seventeen (60.7%) patients were illiterate and twenty seven (96%) were housewives. Manual vacuum aspiration was performed on 22(78.6%) patients upon indication of missed abortion and in 6(21.4%) patients, MVA was done for incomplete abortion. Efficacy was measured in terms of blood loss estimation, need for the switch of procedure, uterine perforation, and infection (Table 1).

Patients' satisfaction with the procedure and pain

during & after the procedure was measured. We found that 25(90%) participants agreed that there was no pain during the procedure and 26(92.8%) participants were of the opinion that there was no pain after the procedure. Twenty four (85.6%) patients were satisfied with the procedure, two (7.2%) patients were not satisfied and 2(7.2%) were uncertain. Satisfaction scale with the procedure is shown in Figure 1.

Table 1: Efficacy of Manual Vacuum Aspiration

Variables		Frequency & Percentage
Blood Loss (mL)	**≤100**	22(78.6%)
	>100	6(21.4%)
Change of Procedure	**Yes**	2(7.2%)
	No	26(92.8%)
Uterine Perforation	**No**	28(100%)
Infection	**No**	28(100%)
Duration of Procedure (Minutes)	**≤10**	22(78.6%)
	>10	6(21.4%)

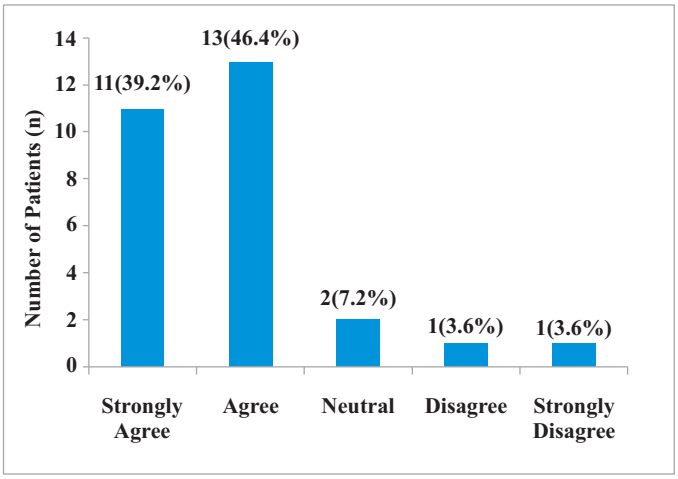

Figure 1: Satisfaction of the Study Participants with the Procedure

DISCUSSION

Miscarriage for any couple is an emotional and distressful event. The treatment offered to these patients should be effective, humane, and without any effect on future fertility. Management of miscarriages is a huge burden on busy hospitals and it is encountered at all levels of healthcare facilities. Manual vacuum aspiration is generally, an acknowledged method of evacuation of the uterus after missed miscarriage, incomplete abortion, persistent gestational sac, and even in endometrial biopsy as an OPD procedure with little or no complications, especially when performed by trained health professionals and within a controlled environment.[8,9]

In this study, the efficacy and satisfaction of MVA in patients presenting with first-trimester miscarriage was determined. The efficacy was measured by the amount of blood loss. We found less than 100 mL of blood loss in 78.6% of cases. A study by Achkzai et al. in 2020 concluded that MVA had better outcomes than the conventional E & C in terms of blood loss as well as uterine perforation.[10] In our study, an important parameter was uterine perforation, which was not noted in any patient. Another study was conducted at the University of Port Harcourt Teaching Hospital to evaluate the efficacy and complications of manual vacuum aspiration. Three hundred & twenty patients were treated with MVA. No complication was seen in any patient. So, MVA is a highly safe and effective procedure. The soft and flexible structure and easy to handle quality of the cannula of MVA are responsible for the safety of the procedure.[11] A study was conducted by Shaheen et al. to compare the efficacy of MVA & medical treatment in the management of miscarriage. They concluded that MVA is a better treatment option as compared to medical treatment.[12]

Another study was conducted in Hayatabad Medical Complex to evaluate the efficacy of MVA and conventional evacuation and curettage. A total of 160 patients were enrolled and categorized into MVA and E & C group. They reported 97.5% efficacy of MVA and 92.5% in E & C. Complication rate was 7.5% in MVA

& 30% in E & C group.[13]

In our study, 25(90%) and 26(92.8%) participants agreed that there was no pain during and after the procedure, respectively and 24(85.6%) patients were satisfied with the procedure. In a study conducted by Arif et al., 200 patients with missed or incomplete abortions at 6-12 weeks are enrolled. These patients were divided into MVA & oral misoprostol group. They concluded that in the MVA group, efficacy was 88%, feasibility was 95%, and patients' acceptability was 97% whereas, in the sublingual oral misoprostol group, efficacy was 64%, feasibility was 68%, and patients' acceptability was 70%.[14] Another study was carried out to determine patients' satisfaction with MVA. They reported that the patients were highly satisfied with MVA.[15] Another study reported that 84.2% of study participants were satisfied with MVA. They also found low pain score during and after the procedure.[16] Thus, with careful patient selection, trained health professionals, and effective counselling of patients, MVA can be used to achieve better results, reduce complications, and follow-ups.

CONCLUSION

Manual vacuum aspiration is an efficient treatment option in terms of complete uterine evacuation, blood loss, pain during & after the procedure, and patient's satisfaction. So, MVA is an acceptable and satisfactory alternative method in patients with first-trimester miscarriages.

LIMITATIONS & RECOMMENDATIONS

The limitation of this study was that this study was carried out in one center only, large multi-centered trials will help in establishing the efficacy of MVA, and the satisfaction regarding the procedure by the patients will also be better assessed.

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