Original Article

Assessment of Efficacy and Safety of Manual Vacuum Aspiration (MVA)

Chandra Madhu Das, Pushpa Srichand, Farkhunda Khursheed, Fouzia Shaikh

ABSTRACT

OBJECTIVE: To assess the efficacy of manual vacuum aspiration (MVA) in term of complete uterine evacuation of product of conception. Secondary end point was to assess safety of procedure.

STUDY DESIGN: Retrospective descriptive study.

PLACE AND DURATION: Department of Obstetrics and Gynecology, Unit-II Liaquat University Hospital Hyderabad Sindh from 15th October 2008 to 14th September 2009.

PATIENT & METHOD: A retrospective review medical records of patients who underwent MVA was carried out. Primary out come measures were efficacy and secondary out come measures were to assess prevalence of complications.

RESULTS: During study period 146 patients underwent surgical management for early pregnancy demise, incomplete miscarriage, retained product of conception after full term pregnancy. Out of 146, 112 patients were scheduled to undergo MVA. Efficacy of procedure was 88.18% (97/110). Incomplete uterine evacuation was seen in 11 patients (9.82%), while 2 patients started to bleed heavily and shifted in Operation Theater in emergency

CONCLUSION: MVA was introduced in Liaquat University of Medical and Health Science (LUMHS) for last 1 year. It is effective, cheap and should be considered to avoid prolonged hospital stay and cost.

KEYWORDS: Efficacy, safety, manual vacuum aspiration, uterine evacuation, conception.

INTRODUCTION

The miscarriage of an early pregnancy is the commonest medical complication, effecting 10-20% of clinically recognized pregnancies[1-3]. In Pakistan approximately 890,000 women present with missed miscarriage or incomplete miscarriage annually and estimated annual miscarriage rate is 29 per thousand women aged 15-49 years[4]; 197,000 women are treated annually for post abortion complications in the public health sector annually[5]. Option for patients with early pregnancy demise and incomplete miscarriage are expectant, medical and surgical. It is reported that medical management is not accepted by women due to uncertainty in predicting the success (20%-80%)[6]. Surgical option for women is dilatation and curettage or by suction evacuation (electric vacuum pump). Conducting the procedure in operating room under general anesthesia means more consumption of health care resources and patients prolonged hospital stay and cost. An alternative to traditional surgical method is manual vacuum aspiration. MVA is a technique for uterine evacuation, which is cost effective, simplicity and portability make it an especially valuable reproductive health technology. During MVA, a 60-ml hand held syringe with self-locking plunger is used to produce vacuum needed to aspirate products of conception. It is performed under local anesthesia in MVA room thus avoiding need of Operation Theater and risk of general anesthesia. This technique is in use for last three decades [7] initially for incomplete miscarriage but currently it is being also used for missed miscarriage, termination of pregnancy and for endometrial sampling. In most studies efficacy of this procedure is shown from 96-99.5%[8,9]. We are using MVA in our unit for last one year. Aim of our study was to assess efficacy and safety of MVA in early pregnancy problems, retained product of conception after full term pregnancy and in residual moles.

PATIENTS AND METHODS

This retrospective descriptive study was conducted at Gynecology Unit-II of LUMHS from Oct 2008 to Sep 2009; Departmental approval for study was obtained. All women under going MVA due to any reason during October 2008 to September 2009 were identified from data register of post abortion care (Pac) room. Data were collected on specially designed proforma. The main study out come was efficacy in term of complete uterine evacuation without the need of any type of further treatment and secondary out come measure include prevalence of procedure related complications like infection, hemorrhage and perforation. Data were entered and analyzed on SPSS version 15. The MVA was performed in Pac room of Gynae Unit-II. Inclusion

criteria were first trimester problem with gestational age less then 12 weeks including therapeutic miscarriages, incomplete miscarriage, early fetus demise, residual moles and retained products of conception after delivery. Exclusion criteria were septic miscarriage and fetal demise with G.A more then 12 weeks. Gestational age was calculated from last menstrual period and from ultrasound (U/S). If there was a discrepancy between these two we followed U/S. Women were included in study for MVA after full counseling regarding procedure. As per protocol all patients were given single dose of antibiotics and pain killer 30 – 45 minutes before procedure while in patients with early fetal demise in addition cervical ripening was done with 400-ug of vaginal misoprostol, 3 hours prior to procedure. Before conducting procedure Ipas easy grip cannulae and MVA plus aspirator was highly disinfected and sterilized with cidex as per protocol to avoid transfer of Hepatitis B, C and HIV. Local anesthesia was achieved by Para cervical block (20-ml of 0.5% Xylocain), 4ml were injected at 12 O'clock, position, where tenaculum was supposed to be applied. 8ml of xylocain administered intra-cervicaly at 4 and 8 O'clock position. Dilatation required in patients with early fetal demise. Ipas easy grip cannulae were used and negative pressure was obtained by using a 60ml Ipas MVA plus aspirator by attaching with cannulae. Procedure was ended when sign and symptoms of complete evacuation felt (red foam in the cannulae, gritty sensation, uterus contracting around the cannulae and increase uterine cramping felt by the patient. Products of conception were sent for histopathology, patients were given oral antibiotic for five days. All the patients who were haemodynamically stable with minimum bleeding and pain after procedure, were discharged 1-2 hours after procedure. At the time of discharge they were advised to contact the ward if they have any problem. All were offered follow-up after 1 week.

RESULTS

Between October 2008 to September 2009, 112 patients were enrolled in the study. In two cases MVA was abandoned prior to procedure because one patient refused and in another patient selection criteria were not met. Both were not included in analysis. Participant's characteristics are shown in table I, the mean±SD age of patient was 27.2±4 years and mean±SD parity was 4±1.2. All patients were married. Mean±SD gestational age in weeks by ultrasound was 9±6 days, excluding those patients with retained products of conception after full term deliveries and patients with residual moles, 25 (22.72%) patients were with previous history of miscarriage and 5 (4.54%) patients with previous history of induced miscarriage. Indication for MVA were early fetal demise in 46.3%, incomplete miscarriage in 36.3%, retained product of conception after term deliveries in 9% and therapeutic miscarriage in 0.9%. Four patients needed blood transfusion due to pre-existing anemia. Efficacy of the procedure was 88.18% (97). There were no uterine perforations however two patients started to bleeding heavily and were shifted in operating room for standard curettage. Eleven patients had incomplete evacuation and underwent standard curettage in operation room.6 patients were re-admitted due to infection and needed injectable antibiotics. Mean±SD post MVA hospital stay was 2.3±4 hours except patients who needed standard curettage or blood transfusion. Most of procedure was done by duty registrar. Except patients with incomplete evacuation or those with infection none of patient came back for follow-up.

TABLE I: PATIENTS CHARACTERS

Character	Result
Marital status	All Married
Mean± SD age	25.2±4
Mean± SD parity	4±1.2
Mean gestational age	9 weeks±6 days
Previous history miscarriage	25 (22.72%)
Previous history of induced miscarriage	5 (4.54%)

TABLE II: INDICATION FOR MVA (n=110)

Indication	Number	Percentage
Early fetal demise	51	46.3
Incomplete miscarriage	40	36.3
RPOCs after Vaginal Delivery	10	9
Residual moles	8	7.27
Therapeutic miscarriage	1	0.9

TABLE III: EFFICACY AND COMPLICATIONS (n=110)

Efficacy & Complications	Number	Percentage
Success (complete evacuation)	97	88.18
Incomplete evacuation	11	10
Infection	6	5.45
Hemorrhage	2	1.8

DISCUSSION

World health organization has listed MVA as an effective and safe method of uterine evacuation and hence technique is being employed increasingly in developing countries[10]. To the best of our knowledge this is first study carried out at Liaquat university hospital, which utilizes manual vacuum aspirator in the management of first trimester miscarriage and also residual moles and retained product of conception after term delivery. This preliminary study was conducted to access efficacy and safety of MVA under local anesthesia in women who previously only had access to electric vacuum aspiration and dilatation and curettage. Efficacy of MVA in our study was 88.18%, less then reported in the literature[11,12]. Higher failure rate may be attributed to unfamiliarity of an team to MVA. Another reason for low efficacy as compared to other studies could be that we included also cases of residual moles and retained product of conception after full term pregnancies which were not included in any of other studies. Rate of incomplete evacuation after MVA is reported approximately 2-3% [13,14], but in our study 10% of patients presented with same problem and reason could be the same. Hope fully with experience efficacy of this procedure will be improved. Prior randomized trial has shown no difference in complications and efficacy between standard curettage and MVA[15]. Our 5.45% patients presented with infection and 1.8% with hemorrhage, Almost same as shown in published literature[13]. None of our patient had uterine perforation. Though MVA is in its infancy in our unit but initial results are promising.

CONCLUSION

Results of present study show that MVA is an attractive alternative to conventional surgical curettage. Beneficiary of this procedure are both patients and health care provider. To the patients it is cheap with short hospital stay, no need general anesthesia and early return to home; while for health care provider it is easy to manage patients in busy emergency when theater and beds are not available.

REFERENCE

1. Khan F.M., Amina A., Ahmed F.L., Naeem N.K. Medical termination of first trimester miscarriages. Annals 2007;13:154-7
2. Milingos D, Mathur M, Smith N, Ashok P.Manual vaccum a safe alternative for surgical management of early pregnancy loss. Br J Obstet Gynecol 2009;116:1268-71
3. Edwards S, Tureck R, Fredrick M. Patient Acceptibilty of manual versuses Electric Vacuum Aspiration for early pregnancy loss. J Women's Health 2005;16:1429-36
4. Bano K, Talat, Iqbal S.Alternative to surgical evacuation of uterus:Misoprostol for post abortion care. J Surg Pak (Int) 2009;14:53-7
5. Population council. 2004. Unwanted pregnancy and post abortion complications in Pakistan: Finding from a National study.
6. Jurkovic D, Ross JA, Nicolaides KH. Expectant management of missed abortion. Br J Obstet Gynecol 1998;105:670-1
7. Wen J, Cai Q, Deng F, Li Y. Manual vaccum aspiration for first-trimester abortion:a systematic review. Br J Obstet Gynecol 2008;115:5-13
8. Freedman MA, Jillson DA, Coffin RR, Novick LF. Comparison of complication rates in first trimester abortions performed by physician's assistants and physicians. Am J Public Health 1986;76(5):559-62.
9. Wesstfall JM, Sophocles A, Burggraf H, Ellis S. Manual vacuum aspiration for first trimester abortion. Arch from Med 1998;7(6):559-62
10. World Health organization. Safe abortion: Technical and Policy Guidance for Health Systems. Geneva, Switzerland: World health Organization
11. Hemlin J, Moller B. Manual vacuum aspiration, a safe and effective alternative in early pregnancy termination. Acta Obstet Gynecol Scand 2001;80:563-7
12. Yin LH. Efficacy assessment of terminating pregnancy by different methods of induced abortion. Huaihai Med 2005;86:79-84.
13. Greenslade FC, Leonard AH, Benson J, Winkler J, Henderson VL. Manual vacuum aspiration; A summary of clinical and programmatic Experience carrboro, NC: IPAS; 1993.

14. Yin FY, Zhong XM, Xu YF. Clinical effect of Terminating early pregnancy by three methods. Chin J Matern Child Health Care 2004;19:68-9
15. Goldberg AB, Dean G, Kang MS, Youssof S, Darney PD. Manual versus electric vacuum aspiration for early first-trimester abortion: controlled study of complication rates. Obstet Gynecol 2004;103:101.

AUTHOR AFFILIATION:

Dr. Chandra Madhu Das *(Corresponding Author)*
Assistant Professor, Department of Gynae & Obs.
Liaquat University of Medical and Health Sciences (LUMHS), Jamshoro, Sindh-Pakistan.
Email: drchandramadhudas@hotmail.com

Prof. Pushpa Srichand
Professor, Department of Gynae & Obs.
LUMHS, Jamshoro, Sindh-Pakistan.

Dr. Farkhunda Khursheed
Senior WMO, Department of Gynae & Obs.
Liaquat University Hospital
Hyderabad, Sindh-Pakistan.

Dr. Fouzia Shaikh
Assistant Professor, Department of Gynae & Obs.
LUMHS, Jamshoro, Sindh-Pakistan.