

## “Para Cervical Block For Cervical Dilatation And Uterine Evacuation By MVA Method: A Safe And Effective Alternative At Tertiary Care, Teaching Hospital.”

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**Abstract: Objectives :** To Determine the safety and effectiveness of Para-cervical Block for cervical dilatation and uterine evacuation by MVA method for patients, who are at high risk for developing general anesthesia related complications. **Materials & Methods:** This descriptive (cross sectional) study was conducted at tertiary care center between September 2017 to February 2018. Total 212 patients had undergone MVA procedure for First trimester incomplete abortion of 12 weeks gestation or less than it. Among them, 162 patients received general anesthesia and remaining, 50 patients received para cervical block. All those 50 patients were counselled regarding MVA procedure under para cervical block. Preoperatively, all patients were given Injection Diclofenac sodium and Injection Atropine Intra-muscularly. All the patients were asked to evaluate the level of pain on a visual analog scale ranged from 0-10. Three minutes after application of para-cervical block, suction and evacuation of uterus by MVA method done. Thirty minutes after the procedure, all patients were asked to describe the pain that they felt during MVA procedure by using the same visual analog scale. Visual analog scale was described by : No pain (0 point), slight pain (1-3 points), Moderate pain (4-6 points), severe pain (7-10 points). All patients were followed up after a week, evaluated for complications and a routine USG of abdomen & pelvis was done, which revealed completeness of the procedure. **Results:** All were first trimester incomplete abortion cases. MVA was performed with para cervical block. According to VAS, 33 (60%) patients had mild pain, 04 (08%) patients had moderate pain, 13(26%) patients had no pain during the procedure. Seven (14%) patients had mild pain and others had no pain after the procedure. There was no severe pain before or after the procedure. No patients had any complications like excessive bleeding, infection or retained products of conception. Thirty Nine (78%) patients were discharged within 24 hours and eleven (22%) patients were discharged after 24 hours with medical advises for associated co-morbidities. Hospital stay and utilization of hospital reserves were reduced and patients satisfaction was equally good. **Conclusion :** Para cervical block is safe and effective option during MVA procedure for patients who are at high risk for developing general anesthesia related complications.

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### I. Introduction

Abortion is the expulsion or extraction of an embryo or fetus weighing 500 gm or less when it is not capable of independent survival (WHO)<sup>1</sup>. The incidence of abortion is difficult to work out but probably 10-20% of all clinical pregnancies end in miscarriage and another optimistic figure of 10% are induced or deliberate. Incomplete abortion is one of the main causes of maternal mortality and morbidity in the developing world<sup>1,2</sup>. Infection and hemorrhage are the main complications in incomplete abortion. It is anticipated that, if post abortion care (PAC) services can be started in a systemic manner at all levels of the health system, it would result in a significant reduction in maternal mortality and morbidity<sup>3</sup>. There are different methods used in post abortion care (PAC). Dilatation and evacuation (D & E) is the most commonly used technique in our country. It uses metal surgical instruments to empty the uterus, usually under general or local anesthesia or deep sedation. It is time consuming and there are chances of incomplete evacuation, hemorrhage and uterine perforation. As an alternative, Manual Vacuum Aspiration (MVA) is one of the most effective techniques of uterine evacuation in incomplete abortion. It removes the contents of uterus using controlled suction. It can be performed even in rural settings where electricity is not available. The MVA procedure is safe, effective and potential for reducing health care costs and improving treatment of incomplete abortion. The major source of discomfort and pain during uterine evacuation with MVA are- anxiety, cervical pain due to dilatation, uterine cramping due to

manipulation. Three categories of medications (Analgesics, Anxiolytics and Anesthesia) are used for pain control. The purpose of pain management during MVA procedure is to help the woman remain as comfortable as possible, while minimizing medication-induced risks and side effects. The term para cervical block refers to the injection of local anesthesia into the cervix. Usually 10-20 ml of 0.5%-1.0% plain lidocaine solution (always less than 200 mg/person, as toxicity occurs at that level). Lidocaine is the most common local anesthetic agent with a characteristic of easy availability, low cost, stability and low risk of allergic/adverse reaction. In comparison, general anesthesia requires the increased complexity of care and the associated costs. It requires some degree of preoperative patient preparation. It causes the greatest number of side effects and complications even stroke. It requires a special team of a doctor and technicians. Spinal and epidural anesthesia also needs anesthetist. On the other hand local anesthesia can be managed by clinician him/her self.

## **II. Materials And Methods:**

It was a descriptive (cross-sectional) study, conducted at tertiary care center from September 2017 to February 2018. Total 212 patients had undergone MVA procedure for first trimester incomplete abortion of 12 weeks gestation or less than it. Among them, 162 patients received general anesthesia and remaining, 50 patients received para cervical block. Women who were diagnosed as having an incomplete abortion and who fulfilled all the selection criteria were recruited for this study

### **A. Inclusion criteria :**

1. Incomplete abortion cases up to 12 weeks of gestation,
2. Failed medical abortion cases up to 12 weeks of gestation,
3. Women aged 18-45 years,
4. Haemodynamically stable.

### **B. Exclusion criteria :**

1. Women with past history of allergy to lidocaine,
2. Active pelvic inflammatory disease,
3. Women with chronic pelvic pain,
4. Refusal to participate in the study

Preoperatively Inj.Diclofenac sodium and Inj.Atropine were given intra-muscularly, 30 minutes before the procedure in all patients. The technique for applying the para cervical block, following WHO 2015 guideline was as follows.

- 1% lidocaine was filled in a 20 ml syringe using an aseptic technique. Then 2 ml injected at 12 o'clock position and tenaculum is placed.
- Then each 4 ml are injected slowly into cervico-vaginal junction at 2 & 4 o'clock positions and each 5 ml are injected slowly into cervico-vaginal junction at 8 & 10 o'clock positions.

Always aspiration was done before injection. Three minutes after application of block, suction and evacuation of uterus was done by MVA method. Before the procedure, all the women were asked to evaluate the level of pain on a visual analog scale. Thirty minutes after the procedure, the patient was asked to describe the pain that she had been feeling during the procedure by using the same visual analog scale. The pain expressed by the patient measured by: no pain (0 points), slight pain (1-3 points), moderate pain (4-6 points) and severe pain (7-10 points). All patients were followed up after a week. Patients were also evaluated for complications and on the 7<sup>th</sup> day after procedure, a routine USG of abdomen and pelvis was done, which revealed completeness of the procedure

## **III. Results**

During the study period, MVA was done with para cervical block in 50 patients of incomplete abortion. Table 1 shows the characteristics of patients. Majority 47 (94%) were due to incomplete abortion and only 03(06%) were due to incomplete evacuation of previous procedure. The mean age of patients was 29.71 ±6.36 years, mean gestational age was 9.31±1.70 weeks. Twenty two (44%) women were primiparous. On the basis of monthly income, economic status were divided into below average income (3,000-5,000 rs.), average income (5,000-12,000 rs.) and above average income (>12,000 rs.). Twenty seven (54%) patients belonged to below average group. Table II shows that four (8%) women felt severe pre procedure pain but after giving para cervical block, no one felt severe pain during or after the MVA procedure. Only four (8%) women felt moderate pain during procedure. The mean procedure time was 9.67 minutes (SD-2.38 minutes). Thirty nine (78%) women discharged within 24 hours of procedure. None of the 50 women had any complication due to para cervical block like allergic reaction, dizziness, disorientation, convulsion, respiratory distress (Table III).

**Table-I Patients’ Characteristics**

Parameters	Mean	±SD
Age(Yrs)	29.71	±6.36
Gestational Age (Weeks)	9.31	±1.70
Parity	N	%
0	22	44
1	12	24
≥2	16	32
Socioeconomic Status		
Below Average Income	27	54
Average Income	16	32
Above Average Income	07	14
Indication Of MVA		
Incomplete Abortion	47	94
Incomplete Evacuation	03	06

**Table-II Level of Pain Sensation of Patient**

Visual Analog Scale (VAS)	Pre-Procedure N(%)	During Procedure N(%)	After Procedure N(%)
None	06(12)	13(26)	43(86)
Slight	25(50)	33(66)	07(14)
Moderate	15(30)	04(08)	00(00)
Severe	04(08)	00(00)	00(00)

**Table-III Outcome Of The Procedure**

Variables	Mean	±SD
Procedure Time (Minutes)	9.67	±2.38
Discharge Of Patient	N	%
Within 24 Hours	39	78
After 24 Hours	11	22
Complications		
No	50	100
Yes	00	00

#### IV. Discussion

Incomplete abortion is one of the common complications of first trimester pregnancy. The incidence of patients attending in the setting do not reflect the actual situation of the country. Because many people do not report and some patients remain at home without treatment. This is true even in case of USA where 19% women of 27-30 years failed to report with their fate of abortion. This study showed that MVA is a safe, effective, brief procedure and it takes only few minutes to complete the procedure. The procedure was completed within 6-10 minutes in most of the cases. Mean duration was 9.67±2.38 minutes and it can be compared with the study of Blumenthal *et al*<sup>6</sup>, it was about 10 minutes. In the study by Forna and Gulmezuglu<sup>7</sup>, the mean duration was 6.1 minutes. The intensity of pain caused by MVA is less than that caused by sharp curettage. This study demonstrated that para cervical block is safe and effective in reducing pain resulting from cervical dilatation and uterine aspiration. Para cervical block is thought to provide pain control for cervical dilatation through parasympathetic fibres of S 2, 3, 4 innervating cervix and lower uterine segment. However, with respect to time spent waiting between the injection and MVA procedure, Phair *et al*<sup>8</sup> did not find any differences between starting the MVA procedure immediately or waiting for 3 to 5 minutes. In this study, the MVA procedure was initiated 3 minutes after the block was applied. Pain is a biopsychosocial experience, where previous experiences and the sociocultural perception of pain denote great differences in the development, severity, and control of pain<sup>9,10</sup>. Thus, measuring the degree of pain becomes a difficult task. The para cervical block used in this study and MVA are safe and effective techniques in that they did not produce any complications. This study revealed that MVA is not that much costly procedure. Most of the patients were discharged within 24 hours, it corresponds with the study of Blumenthal *et al*. Another study by Fonseca *et al* showed that MVA needed less hospital staying time compared with D & E. Their inference is that, there is 41% reduction of cost in MVA case. In this small study we found that the procedure was completed without any complications. As there was minimum or no pain and hospital stay was less, patients were satisfied. Moreover, hospital cost was also low and there was less manpower involvement. There was no need of involvement of anesthetist.

## V. Conclusion

Our primary purpose was to document the safety and effectiveness of para cervical block during MVA procedure for patients who are at high risk for developing general anesthesia related complications. It can be said that in properly selected cases, MVA is safe, effective, quick to perform, less costly and less painful than sharp curettage and less chance to perforate the uterus. It decreases hospital stay of patient and decreases utilization of hospital reserves and those reduces hospital costs. It is a measure, which can greatly contribute towards the reduction of maternal morbidity and mortality. The generalizability of our data is limited because we only included women with a gestational age up to 12 weeks on a small study population. So, further study is necessary comprising a greater number of population including gestational age more than 12 weeks. As para cervical block can be given at low resource setting, service providers at grass root level should be trained to make it available.

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