

# Assessment of the Efficacy of Different Methods of Second Trimester Abortion: An Initial Experience in Eastern Nepal

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## ABSTRACT

**Background:** Abortions performed in the second trimester account for a disproportionate amount of abortion-related morbidity and mortality.

**Materials and methods:** To assess the effectiveness of medical vs the surgical methods for second trimester abortions.

**Results:** A total number of 141 patients were included in the study from September 2009 till August 2012 who underwent second trimester abortion. A total number of 75 patients underwent medical abortion and 66 patients underwent surgical dilatation and evacuation (D&E). Surgical treatment with D&E was more effective and safer than medical treatment for second trimester abortion. The overall complications were seen more in the medically treated cohort with 20 vs 6% in the surgical cohort ( $p = 0.02$ ), with higher incidence of incomplete abortion (13 vs 0) and a higher amount of blood loss ( $129.4 \pm 20.6$  ml vs  $69.6 \pm 11.4$  ml,  $p < 0.001$ ) requiring transfusion.

**Conclusion:** This study demonstrates that the surgical method of second trimester abortion is more effective and safe procedure in experienced centers and as compared to medical methods. The complication rates are lower and it also is more cost-effective as it can be performed in an outpatient setting and does not require hospital admission.

**Keywords:** Abortions, Dilatation, Evacuation, Mifepristone, Misoprostol, Second trimester.

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## INTRODUCTION

Approximately, 50 million induced abortions are performed world wide each year which constitutes 25%

of all pregnancies as estimated by the World Health Organization (WHO). Estimates suggest that more than half of these abortions are performed under unsafe conditions and result in more than 70,000 deaths per year, almost all in developing countries.<sup>1</sup> Deaths as a result of unsafe abortions in developing countries are estimated at 80,000 annually, i.e. 400 deaths per 100,000 abortions.

Several factors play a role in such unsafe induced abortions in developing countries, like late diagnosis of pregnancy or fetal anomalies, logistic and financial barriers to abortion services, and fear of disclosure or of the procedure.<sup>2,3</sup> As abortions performed in the second trimester account for a disproportionate amount of abortion-related morbidity and mortality<sup>4</sup> the ideal method of second trimester abortion is debated. Surgical and medical methods of second trimester abortion have both evolved in the last three decades. Dilatation and evacuation (D&E), introduced in the 1970s, has become the preferred surgical technique over dilation and curettage, hysterotomy, and hysterectomy because of its relative safety.<sup>5</sup> Specialized training and the maintenance of an adequate case load are required to perform D&E safely. Inexperienced providers are advised to use medical methods.<sup>6</sup> For medical abortion, the most frequently employed prostaglandin analog is misoprostol which is used alone or in combination with the antiprogesterin, mifepristone.

## MATERIALS AND METHODS

The main aim of this study was to assess the effectiveness of medical *vs* the surgical methods for second trimester abortions. The study also determines the outcome of both the methods with respect to complications, like incomplete abortion, bleeding and sepsis.

A second trimester abortion registry is being maintained in the Department of Obstetrics and Gynecology at the BP Koirala Institute of Health Sciences (BPKIHS) in Dharan, which is a tertiary referral center in eastern Nepal. It was a prospective randomized control trial from September 2009 till August 2012. The study was approved by the BPKIHS, ethics committee and informed consent was obtained. The inclusion criteria were all women attending the BPKIHS outpatient for voluntary termination of intrauterine pregnancy with the gestational age of 12 to 18 weeks based on the last menstrual period and

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on obstetric ultrasonography, singleton pregnancy and hemoglobin of  $\geq 10$  gm/dl. Patients were excluded if it was twin pregnancy, pregnancy  $> 18$  weeks, previous two cesarean section, previous uterine scar, like myomectomy, patients with chronic diseases, chronic adrenal failure, prolong use of steroids, inherited prophyrias, asthma, bronchitis, anticoagulant disease or allergic to mifepristone or misoprostol and patient who has already taken the medication her own.

Depending upon the computer-generated randomization, the patients underwent medical or surgical D&E. For the medical abortion cohort mifepristone 200 mg on OPD basis followed by misoprostol 400 mcg vaginally or sublingually after admission until the patient expels the fetus. Maximum of five doses were used 4 hours apart. If more than 5 doses were used, it was termed as failed medical abortion. In the surgical cohort, cervical priming was done with misoprostol followed by D&E. The outcomes of both medical abortion and D&E were compared depending on the number of misoprostol required, the duration of the procedure, induction to abortion interval, amount of blood loss, any associated complications, like incomplete abortion, sepsis, excessive hemorrhage, infection or rupture uterus.

All analyses were conducted with SPSS version 15 (SPSS Inc, Chicago, Ill). Categorical variables are presented as frequencies and were compared by means of a Chi-square test. A two-sided value of  $p < 0.05$  was considered statistically significant.

## RESULTS

A total number of 141 patients were included in the study from September 2009 till August 2012 who underwent second trimester abortion. A total number of 75 patients underwent medical abortion and 66 patients underwent surgical D&E. The mean age of patients who underwent medical abortion was  $27.6 \pm 7.6$  years and those who underwent surgical abortion was  $28.4 \pm 6.6$  years. Among the cohort treated medically 75% were multigravida and among those treated surgically 65% were multigravida. Majority of the women who underwent second trimester abortion were illiterate, and thus accounted for 69% of all the procedures performed. The most common form of contraception use reported by both groups were oral contraceptive pills (53%) followed by subcutaneous Depo-Provera injections (28%).

In the medical abortion group, all patients were given mifepristone. Out of the 75 patients, 13 patients expelled with 1st dose of misoprostol and the induction to abortion interval was 4 hours. Twenty-three patients expelled with 2nd doses of misoprostol, 16 patients expelled with 3rd

**Table 1:** Comparison of complications in medical vs surgical groups

	Medical group (n = 75)	Surgical group (n = 66)	p-value
Complication with treatment	15	4	0.023
Incomplete abortion	0	2	—
Retained placenta	13	0	—
Bleeding requiring transfusion	8	2	0.2
Mean blood loss (ml)	$129.4 \pm 20.6$	$69.6 \pm 11.4$	$<0.001$
Sepsis	0	0	—

doses of misoprostol, seven patients expelled with 4th doses of misoprostol and nine patients expelled with 5th doses of misoprostol. Among the medical group, seven patient did not respond to mifepristone and 5 doses of misoprostol which was termed as failed medical abortion. They were induced with misoprostol again after 24 hours. All patients expelled, five patients expelled with 3 doses of misoprostol and two patient with 2 doses of misoprostol.

In the medical group, there were complications were observed in 15 patients. Eight patients had heavy bleeding that required blood transfusion and 13 had retained placenta. In the surgical group, there was heavy bleeding seen in two patients which required blood transfusion and two patients had incomplete abortion. Manual removal of placenta was performed for retained placenta and MVA was performed for incomplete abortion. Blood loss was more in the medically treated group and this was statistically significant (Table 1).

## DISCUSSION

The present study demonstrates that surgical treatment with D&E was more effective and safer than medical treatment for second trimester abortion. The overall complication were seen more in the medically treated cohort with 20 vs 6% in the surgical cohort. The complications included bleeding, retained placenta and incomplete abortion.

Similar study was done by Autry et al which showed same results that overall complications were more in patients who underwent medical abortion (29 vs 4%;  $p < 0.001$ ). They also concluded that D&E is the safest method of second trimester abortion.<sup>7</sup>

Bleeding was also seen more in medical group, eight patients required transfusion in our study and surgical group where two patient required transfusion. The mean blood loss was also higher in the medical abortion group. Similar study done by Grimes et al showed that

the incidence of minor complications as hemorrhage not requiring transfusion, febrile morbidity, cervicovaginal trauma was lower in patients in surgical group.<sup>8</sup>

Patients undergoing medical abortion were required to stay in the hospital for a longer period of time till expulsion and needed monitoring as compared to the surgical group where the procedure was performed on an outpatient visit not requiring hospital admission.

In our study, 13 patients expelled with 1 dose of misoprostol, 23 with 2 doses of misoprostol, 16 with 3 dose of misoprostol, seven with 4 doses of misoprostol and nine with 5 doses of misoprostol. Whereas in surgical method, the duration taken is approximately 30 minutes as an outpatient procedure and patient can be discharged on the same day.

Dilatation and evacuation affords both patients and clinicians more predictable procedure timing. Experienced clinicians can accomplish D&E in <30 minutes as an outpatient procedure, and patient can return to work on the same day. Most patient find that the predictability of surgical abortion and avoiding the memory of prolonged labor make D&E less emotionally burdensome than induction abortion.<sup>9</sup> Dilatation and evacuation can also present less of a financial burden, particularly when performed in an out-of-setting. Finally, the controlled timing and predictability of D&E can offer medical benefits for patients with specific types of medical compromise.

In spite of a higher proportion of secondary effects, satisfaction with the medical method may be better than with surgical abortion. In comparison to a surgical procedure, most women consider medical abortion 'non-invasive' and nonviolent, in the sense that their bodies are not invaded by instruments and that nothing is cut-up from them. In some cultures, a medical abortion is deemed more natural, because pills are ingested for many purposes and the whole process appears more similar to a miscarriage than to an induced abortion. It is also viewed as more private, because there is no disrobing unless a pelvic examination is involved, and women are usually alone when they expel the products of conception in a pool of blood.

Although D&E is a very safe and effective procedure, its safety profile derives from the surgeon's knowledge, experience, and skills. In the past, institutions that have lacked skilled and D&E providers have had to refer patients to other facilities or choose medical induction

regimens characterized by long induction-abortion intervals and relatively high rates of complications. This is no longer the case. Although few studies directly compare surgical abortion with recent medical regimens, newer medical regimens using PG E<sub>1</sub> analog with or without mifepristone offer sufficiently effective, well-tolerated abortion-induction intervals so that clinicians have far greater attitude choosing a medical *vs* surgical approach. Furthermore, studies of second trimester medical abortion suggest that when a nonsurgical option for abortion exists, many women will choose it in hopes of avoiding instrumentation or assuring greater privacy. This suggests that some women might also prefer medical induction to surgical abortion in the second trimester. Several common clinical situations warrant further consideration.

## CONCLUSION

This study demonstrates that the surgical method of second trimester abortion is a more effective and safe procedure in experienced centers and as compared to medical methods the complication rates are lower and it also is more cost-effective as it can be performed on an outpatient setting and does not require hospital admission.

## REFERENCES

1. WHO, Abortion. A tabulation of available data on the frequency and mortality of unsafe abortion. 2nd ed. Geneva; 1993.
2. Grimes DA. The continuing need for late abortions. *J Am Med Assoc* 1998;280(8):747-750.
3. George A, Randall S. Late presentation for abortion. *Br J Family Planning* 1996;22:12-15.
4. Bartlett LA, Berg CJ, Shulman HB, Zane SB, Green CA, Whitehead S, Atrash HK. Risk factors for legal induced abortion-related mortality in the United States. *Obstetrics and Gynecology* 2004;103(4):729-737.
5. Grimes DA, Schulz KF. Morbidity and mortality from second trimester abortions. *J Repro Med* 1985;30(7):505-514.
6. Royal College of Obstetricians and Gynaecologists. *The Care of Women Requesting Induced Abortion*. London: RCOG Press; 2004.
7. Autry AM, Hayes EC, Jacobson GF, Kirby RS. A comparison of medical induction and dilation and evacuation for second-trimester abortion. *Am J Obstet Gynecol* 2002;187(2):393-397.
8. Grimes DA, Schulz KF. Mid-trimester abortion by dilatation and evacuation: a safe and practical alternative. *N Engl J Med* 1977;296:1145.
9. Freeman EW. Abortion: subjective attitudes and feelings. *Fam Planning Perspect* 1978;10(3):150-155.