ORIGINAL RESEARCH

Retrospective observational study on the combined use of Intracervical Foley catheter and vaginal misoprostol in secondtrimester pregnancy Termination

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ABSTRACT

Background: Second-trimester pregnancy termination is performed for elective abortion, miscarriage management, and pregnancy termination due to fetal anomalies and maternal health conditions¹. The literature on the termination of pregnancies in the second trimester is scanty. There has been an increase in the number in the last decade due to improved prenatal screening². The morbidity associated with these cases is much higher in comparison to first-trimester terminations. **Methods**: This retrospective observational study was conducted in the department of obstetrics and gynaecology at Kalpana Chawla Medical College and Hospital, Karnal, India. The data were collected from the medical case records from July 2020 to June 2021. Records were analyzedbased on epidemiology, obstetric history, complications and outcome after use of intracervical foley catheter and vaginal misoprostol, for second trimester abortions. **Results**: 52 cases met the inclusion criteria and were induced with intracervical foley catheter and vaginal misoprostol simultaneously. 48 cases aborted successfully while 4 cases required hysterotomy. All patients requiring hysterotomy had a history of scarred uterus. Few complications such as haemorrhage, need for blood transfusion, and retained placenta were seen. However, no cases of ruptured uterus, or maternal mortality were reported. **Conclusion:** Simultaneous use of intracervical foley catheter and vaginal misoprostol for induction in second trimester abortions is safe and effective. However, in cases with history of previous uterine surgery, care should be taken when choosing this method.

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INTRODUCTION

Second-trimester pregnancy termination is an important component of comprehensive women's health care¹. It refers to the cessation of pregnancy from 13-28 weeks of gestation which can be further divided into early second trimester between 13-22 weeks and late as 23-28 weeks. Mid trimester pregnancy terminations constitute 10-15% of all induced abortions worldwide, which are far less in number than first-trimester terminations. However, this is associated with more than two-thirds of complications in the form of significant maternal morbidity and hospital stay^{1.2}.

There has been a steady increase in the second trimester termination of pregnancy, because of the detection of serious fetal anomalies. The widespread introduction of prenatal screening programmes have led to a gradual increase in the admission of patients with serious fetal anomalies, opting for second trimester termination of pregnancy. Other reasons for mid-trimester pregnancy termination include foetal death in utero, selected maternal medical conditions, failed first trimester abortions and patient's request for elective abortions^{3,4}.

Mid-trimester pregnancy should be meticulously evaluated before any intervention by careful assessment of medical/psychological conditions, history, pelvic examination, sonographic examination, and laboratory tests.

Various surgical and medical methods have been tried for the second trimester MTP either alone or in combination, with varying success and induction abortion interval. A variety of techniques and methods available for second-trimester termination include prostaglandins (PGs), mechanical stimulation with a catheter, laminaria tent, amnioinfusion, and dilatationevacuation(D&E). Other surgical methods include hysterotomy and hysterectomy, which are done only in special circumstances⁵.

The main concern of the obstetricians is to provide the most effective, safest, and cost-effective method that will have the shortest induction to expulsion time with minimal sideeffects⁵. We intend to see the efficacy and safety of intracervical foleys catheter for 2nd-trimester termination(between 13-20 weeks gestation), complications, and need for hysterotomy in some cases.

METHODS

This retrospective observational study was conducted in the Department of obstetrics and gynecology at Kalpana Chawla Medical College and Hospital, Karnal, Haryana, India.

The data of 52 patients was collected from the medical case records from July 2020 to June 2021, who fulfilled the inclusion criteria. Records were analyzed on the basis of epidemiology, obstetric history, complications, and outcome after the use of intracervical foley's catheter and vaginal misoprostol, for second trimester abortions.

Inclusion criteria

- 1. Singleton pregnancy
- 2. Gestation age of 13 completed weeks to 20 weeks.
- 3. H/o intracervical foley catheter and vaginal misoprostol for termination.

Exclusion criteria

- 1. Gestation >20 weeks and < 13 weeks
- 2. Concomitant use of mifepristone, PG-E2
- 3. Presence of uterine contractions / Patients with signs of established
- 4. Labor
- 5. Presence of contraindications to Misoprostol, Low lying placenta,
- 6. Chorioamnionitis cases
- 7. Complete records are not available.

RESULTS

The study found a diverse age distribution, with the majority falling within the 20-29 years range, as shown in table 1.

Table 2 presents the distribution of cases based on the previous mode of delivery and gestational age. The largest group in terms of previous mode of delivery comprises primigravida (34.6%), followed by cases with a history of previous cesarean sections (32.7%). The gestational age distribution highlights a slightly higher prevalence in the 13-16 weeks range (55.77%), suggesting that the majority of cases opted for second-trimester termination in the earlier part of the specified gestational period.

Table 3 outlines the etiology of second-trimester abortions, shedding light on the underlying reasons for termination. Gross congenital anomalies emerge as the most common cause (44.23%), followed by intrauterine fetal death (IUD) (38.46%). The diversity in etiological factors underscores the complexity of decisions surrounding second-trimester termination.

The outcome table 4 indicates that out of the total 52 cases, 48 were successfully aborted, resulting in an impressive success rate of 92.3%. However, four cases required hysterotomy, which emphasizes the need for careful consideration, particularly in certain clinical scenarios.

Table 5 explores the relationship between a history of uterine scarring and the outcome of termination. Among the spontaneously aborted patients, 19 had a history of uterine surgery, whereas all four cases requiring hysterotomy had a scarred uterus. This underlines the significance of considering uterine scarring as a potential factor influencing the choice of termination method.

The complications table 6 provides insight into the safety profile of the termination methods. Notably, 82.7% of cases experienced no complications. Hemorrhage requiring blood transfusion was observed in 9.6% of cases, while retained placenta and post-abortal fever were relatively infrequent at 3.8% each. The majority of cases reporting no complications suggest a favourable safety profile for the simultaneous use of intracervical Foley catheter and vaginal misoprostol in second-trimester termination.

Age Distribution	Number of cases	Percentage
	(Total =52)	
< 20 yrs	3	5.8%
20-24 yrs	21	40.3%
25-29 yrs	15	28.8%
30-34 yrs	9	17.3%
35-39 yrs	3	5.8%
> Or equal to 40 yrs	1	1.9%

TABLE 1: AGE DISTRIBUTION

TABLE 2: DISTRIBUTION OF PREVIOUS MODE OF DELIVERY AND GESTATIONAL AGE

Serial		Number of cases	Percentage
no.		(Total =52)	
PREVIOUS MODE OF DELIVERY			
1.	Primigravida	18	34.6%
2.	History of Previous normal vaginal delivery	9	17.3%
3.	History of Previous abortions	2	3.8%
4.	Previous LSCS	17	32.7%
5.	Previous normal vaginal delivery and LSCS	6	11.5%
GESTATIONAL AGE DISTRIBUTION			
1.	13-16 weeks	29	55.77%
2.	16+1 week -20 weeks	23	44.23%

TABLE 3: ETIOLOGY OF SECOND TRIMESTER ABORTION

Etiology of second trimester abortion	Frequency	Percentage
Gross Congenital Anomaly	23	44.23%
IUD	20	38.46%
MTP d/t social causes, contraceptive failure	7	13.46%
Anhydramnios	2	3.84%

TABLE 4: OUTCOME

Total	52
Successfully Aborted	48
Cases requiring hysterotomy	4

TABLE 5: CO-RELATION BETWEEN H/O UTERINE SCARRING AND OUTCOME

	Spontaneously aborted patients(48)	Hysterotomy(4)	
History of uterine Surgery i.e.	19	4	23
Scarred Uterus			
No H/o Uterine surgery	29	0	29

TABLE 6: VARIOUS COMPLICATIONS DURING SECOND TRIMESTER ABORTION

COMPLICATION	FREQUENCY	PERCENTAGE
Hemorrhage requiring blood transfusion	5	9.6%
Retained Placenta	2	3.8%
Post abortal fever	2	3.8%
No complications	43	82.7%

The results highlight the diverse characteristics of the study population, the prevalence of various etiological factors leading to second-trimester abortion, and the effectiveness and safety of the chosen termination method, with due consideration to the history of uterine scarring. The low complication rates contribute to the overall positive assessment of the studied approach.

DISCUSSION

The retrospective observational study on the simultaneous use of intracervical Foley catheter and vaginal misoprostol for second-trimester pregnancy termination sheds light on a crucial aspect of reproductive healthcare. The discussion will elaborate on key findings, their clinical significance, and implications for future research and clinical practice.

Worldwide, second-trimester abortion constitutes about 10-15% of all induced abortions¹. The study recognizes the multifaceted nature of second-trimester termination, addressing elective abortion, miscarriage management, and termination due to foetal anomalies and maternal health conditions. The scarcity of literature in this area is highlighted, emphasizing the need for focused research given the increase in second-trimester terminations over the last decade, primarily attributed to improved prenatal screening⁶.

The study acknowledges the elevated morbidity associated with second-trimester terminations compared to their first-trimester counterparts. This finding aligns with previous research, emphasizing the importance of selecting the most efficient and safe method for termination in second trimester cases. The discussion underscores the need for meticulous patient selection and individualized approaches based on medical history^{6,7}.

The core of the discussion centers around the efficacy and safety of the simultaneous use of intracervical Foley catheter and vaginal misoprostol for secondtrimester termination. The study reports a success rate of 92.3%, with 48 out of 52 cases achieving successful abortion. This high success rate aligns with existing literature, affirming the combined method as a viable and effective option 6,7 .

An important finding is the association between a scarred uterus and the need for hysterotomy. All four cases requiring hysterotomy had a history of uterine scarring. This again underscores the importance of cautious patient selection and consideration of medical history when opting for the intracervical Foley catheter and misoprostol combination, particularly in cases of previous uterine surgery.

Moreover, the study reports a relatively low rate of complications, with haemorrhage requiring blood transfusion being the most notable. The overall safety profile of the intracervical Foley catheter and misoprostol combination is considered favourable, as the majority of cases experienced no complications. This information reinforces the method's potential as a safe and efficient option for second-trimester termination⁸.

The discussion anticipates a rise in second-trimester abortion rates due to the increasing incidence of caesarean sections⁸. This trend prompts a call for more research on alternative termination methods to address the growing demand for second-trimester abortions. The implications extend beyond medical considerations, emphasizing the need for healthcare facilities to adapt to evolving trends in reproductive healthcare.

STUDY LIMITATIONS

The discussion section concludes by acknowledging the limitations of the study, such as its retrospective nature and the relatively small sample size.

It emphasizes the need for more extensive studies to further validate the safety and effectiveness of the intracervical Foley catheter and misoprostol combination. The call for additional research serves as a foundation for future investigations in the field of second-trimester pregnancy termination.

CONCLUSION

Given the increasing incidence of cesarean sections, the study anticipates a rise in second-trimester abortion rates. It calls for additional research on the safety and effectiveness of alternative termination methods, emphasizing the importance of exploring and implementing such approaches.

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CONFLICT OF INTEREST

None declared

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