

TERMINATION OF PREGNANCY BY COMBINED INTRAUTERINE CATHETER AND LAMINARIA TENT

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SUMMARY

The safety and efficacy of laminaria tent combined with intrauterine plain rubber catheter for termination of mid or early third trimester pregnancy, was evaluated in 120 women at Patna Medical College Hospital, Patna. This series also included 9 women with previous caesarean section. After proper screening and consent, one transcervical laminaria tent and one or two extra-amniotic plain rubber catheters depending upon the size of the uterus, were used in each subject. Mean application abortion interval was found to be 30.43 hours. Failure rate was only 2.25%. Complication in the form of retained placenta occurred in 11.6% and excessive bleeding in 2.5% which was readily controlled by routine measures. No serious complication related to the procedure occurred during the process of abortion or at follow-up. Combined use of rubber catheter and laminaria tent was found to be a safe, simple, cheap and highly effective method for termination of mid or early third trimester pregnancy.

INTRODUCTION

Population explosion is the single most important and serious problem facing the whole world and particularly the devel-

oping world where all developmental efforts fail due to resources being too inadequate for the vast number of consumers.

With legalisation of abortion in India, termination of pregnancy has acquired an important place in population control. While M.T.P. during first trimester, is relatively

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easy as it can be accomplished by suction evacuation or menstrual regulation, the same is not true for the second trimester. Many times termination of pregnancy is also indicated for foetal malformations which if detected late, poses a problem for the Obstetrician. Various methods are in use for this purpose including ethacridine lactate (extra-amniotic instillation), prostaglandin, intrauterine plain rubber catheter and laminaria tent either alone or in combination with prostaglandins. All these methods have their own risks and benefits, but none of them fulfill the criteria of an ideal method which should be cheap, safe, easy to perform and yet 100% effective.

MATERIALS AND METHODS

The present study was conducted in the Department of Obstetrics and Gynaecology, Patna Medical College Hospital on 120 women who desired termination of pregnancy on various medical and social grounds. Each case was evaluated properly by good history taking and thorough clinical examination before including her into the trial. Informed consent was obtained. Routine investigations like Hb. %, TCDC of WBC, ABO grouping, Rh-typing and routine urine analysis were done. Any general and local infection was ruled out.

Procedure :

With full aseptic and antiseptic precautions one or two autoclaved plain rubber catheters (one for the uterus less than 14 weeks, and two for more than 14 weeks size) were introduced to their full length extra-amniotically into the uterine cavity. One laminaria tent of 8 to 10 mm. diameter was then inserted into the cervical canal

so that tip of the tent reached just beyond the internal os. The time of onset of uterine contractions and the time of abortion were noted. If uterine contractions failed to start within 24 hours of the procedure the tent was pulled out and oxytocin drip was started (5 units in 1 pint of 5% dextrose) and given in escalating dose. Intramuscular injection of Prostaglandin F2 alpha (Prostodin) was given at 4 hourly intervals if the oxytocin drip failed to establish uterine contractions within the next 12 hours. The method was considered failure, if abortion did not occur within 72 hours of the procedure. Each case was given antibiotic prophylaxis with oral Ciprofloxacin 500 mg. twice daily and Metronidazole 400 mg. thrice daily from the beginning of the procedure and was continued for 5 days after the abortion. If the process continued beyond 48 hours, vaginal swab was sent for culture and sensitivity, and Cefotaxime 1 gm. I.V. 8 hourly was added. Except when contra-indicated, 0.25 mg. I.V. ergometrine was given to all patients after the abortion. Any complication arising during the procedure was adequately dealt with and recorded. Anti-D prophylaxis was given to every non-sensitized Rh-negative subject at the beginning of the procedure. Each case was followed after one week and one month of abortion and any complication related to the procedure was noted and properly dealt.

OBSERVATIONS

Age, parity, gestational age, and indication for termination have been shown in Table I. Nine cases of previous C.S. (3 of them twice and 2 thrice sectioned) were also included in the study. Appli-

Table I
SHOWING GENERAL CHARACTERISTICS OF WOMEN
UNDERGOING TERMINATION (TOTAL 120)

		No. of cases.	Percentage
Age	- Less than 20 years	28	23.3%
	20 to 30 years	82	68.3%
	Above 30 years	10	8.3%
Parity	- Primigravida	25	20.83%
	Multigravida	95	79.16%
Gestational age	- 14 to 20 weeks	104	86.6%
	21 to 30 weeks	10	8.3%
	Above 30 weeks	6	5.0%
Indications	- Family Planning	72	60.0%
	Social ground	27	22.5%
	Medical disease	6	5.0%
	Gross foetal malformation	15	12.5%

Table II
SHOWING APPLICATION INDUCTION INTERVAL

Times in hours	No. of cases	Percentage
Less than 12 hours	30	25.0%
12 to 24 hours	56	46.6%
24 to 48 hours	34	28.3%
Above 48 hours	Nil	0 %

cation- induction interval was defined as the time taken for uterine contractions to be established after the application of tent and catheter. It was less than 24 hours in 86 (72%) cases (Table II). The remaining 34 (28.3%) cases were given oxytocin infusion which successfully induced good uterine contractions in 23 (27.5%) within

the next 12 hours (Table IV). The remaining 11 (4 primi and 7 multi) were given I.M. injections of Prostaglandin F2 alpha (Prostodin) every 4 hourly until good uterine contractions were established.

Table III shows the application-abortion interval in the present series. It was defined as the time taken for abortion to occur after application of tent and catheter. Mean abortion time was 30.43 hours. The method was considered to have failed only in 3 (2.5%) cases, because abortion did not occur

even at the end of 72 hours. A positive response was however apparent even in them by mild uterine contractions, blood stained vaginal discharge and cervical patulousness. Two of them had pregnancy of less than 20 weeks duration and abortion was completed in them by embryotomy without any hazard. In the third case pregnancy was of 33 weeks duration with previous C.S. and the anencephalic foetus had to be delivered abdominally.

Abortion was complete in 88.4% and

Table III
SHOWING APPLICATION-ABORTION INTERVAL

Time in hours	No. of cases	Percentage
Less than 12 hours	2	1.7%
12 to 24 hours	35	29.2%
24 to 48 hours	56	46.7%
48 to 72 hours	14	11.6%
Failure	3	2.5%

More than 85% aborted within 48 hours of the procedure.

Table IV
SHOWING NO. OF CASES REQUIRING OXYTIC STIMULATION

Type of stimulation.	Primi	Multi	Total	Percentage
Oxytocin drip	12	22	34	28.3%
Prostodin (IM)	4	7	11	9.16%

IM prostaglandin was used in 11 (9.16%) of cases.

Table V
SHOWING COMPLICATION AT THE TIME OF ABORTION

Type of complications	No. of cases	Percentage
Retained placenta	14	11.6
Excessive bleeding	3	2.5%
Cervical tear	Nil	0 %
Sepsis	Nil	0 %
Failure	3	2.5%

Retained placenta was the commonest complication

Table VI
SHOWING INCIDENCE OF COMPLICATIONS DURING FOLLOW-UP

Type of complications	At one Week		At one Month	
	No.	%	No.	%
Bleeding	7	5.8 %	2	1.7 %
Infection	1	0.8 %	Nil	0 %
Any other	Nil	0 %	Nil	0 %

Even at the end of one month 2 cases continued to have slight bleeding.

in majority the foetus and placenta were expelled en-masse (Table V). Placenta was retained for more than an hour in 14 cases which was removed manually under short acting I.V. anaesthesia. The incidence of excessive bleeding was very low (2 - 5 %) and was easily controlled by a repeat dose of 2.5 mg. ergometrine, fundal massage and continued oxytocin drip.

At follow-up visit after one week, only 7 (5.8%) cases were still having significant

bleeding while one case showed evidence of mild infection. Only haematinics were prescribed for bleeding cases, but they were asked to report immediately if the bleeding was heavy. The antibiotic was changed to Cefotaxime in the infected case and she improved within 48 hours.

At one month follow-up visit, two cases were still having intermittent bleeding. Repeat curettage was done in them and decidual tissue removed. No serious complication

related to the procedure was ever encountered either during the process of abortion or at follow-up visits.

DISCUSSION

The present study was undertaken to evaluate a method in which two age old devices viz laminaria tent and intrauterine plain rubber catheters were combined for termination of pregnancy.

Laminaria tent was used as early as 1869 by Braxton Hicks as a cervical dilator. It acts by hygroscopic action and causes slow dilatation of cervix which greatly reduces the incidence of laceration and cervical incompetence. Tent has been used as an adjunct to Prostaglandin for mid-trimester abortion by many workers (Karim et al, 1982, and Bygdeman and Christensen, 1983). It reduces the abortion time with reduced incidence of sepsis and lessens Prostaglandin dose required with a consequent reduction in its side-effects (Johnson, 1989).

Plain rubber catheter is an inert device which causes release of Prostaglandins by stripping the membranes. Intrauterine rubber catheter for induction of abortion or labour is in use since ancient times. More recently it has gained much popularity for induction of mid-trimester abortion especially in India due to its low cost and high efficacy (Nath et al 1993; Mishra and Jha 1985, and Lal & Prasad 1986).

Combining laminaria tent with plain rubber catheter in the present series resulted in high success rate, comparable to that reported by Karim et al (1982) with laminaria tent and intramuscular injection of Prostaglandin. Incidence of complications was very low in the present series. Retained

placenta occurred in only 11.6% as compared to 44% in mid-term Prostin induction abortion as reported by Yadav et al (1995). Only mild infection occurred in 0.8%. Such a low incidence of infection may be attributed to the use of properly sterilized tent and catheters, strict aseptic and antiseptic precautions during the procedure, routine use of antibiotics, avoidance of unnecessary pelvic examination and removal of tent after 24 hours of insertion.

The cost involved in any procedure has to be considered in a developing country like India. The total cost involved in the present protocol is much lower than that of any other approved protocol for mid-term abortion.

CONCLUSION

Combined use of laminaria tent and plain rubber catheter was found to be a safe, simple, cheap and highly effective method for terminating mid or early third trimester pregnancy. Observation of strict asepsis, proper vigilance and prompt management of any complication, if occurs, is however, essential.

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