

MID TRIMESTER TERMINATION OF PREGNANCY WITH SIMULTANEOUS USE OF HYPERTONIC SALINE, OXYTOCIN AND LAMINARIA TENTS

(Review of 500 cases with different Techniques)

by

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There is no uniformity in the methods for midtrimester pregnancy termination, like the suction evacuation for the first trimester pregnancy. Many are still using hypertonic saline or urea intra-

trio combination of hypertonic saline, oxytocin drip and laminaria tents gives good results.

Methods Used

Hypertonic saline, oxytocin and laminaria tents	Hypertonic saline or hypertonic glucose	Hypertonic saline and oxytocin drip	Hysterotomy	Total
139	224	17	120	500

amniotically. In the western world and where available the use of prostaglandins has come up. Nonavailability and high cost are responsible for its very limited use in India. Hypertonic saline is hence being used very commonly in many centres in India. So far many were using 20% saline, but to reduce the hazards some gynecologists are trying 5% saline. A satisfactory solution for the midtrimester termination is yet to be found.

This paper is a review of 500 cases of midtrimester termination of pregnancy by various methods and to show how the

In 224 cases of other units of the department hypertonic saline or glucose was used. In 139 cases of the author's unit and private patients hypertonic saline was combined with oxytocin drip and laminaria tents. In 17 cases hypertonic saline was combined with oxytocin drip only. In 2 cases hypertonic saline was injected by the vaginal route and combined with oxytocin drip and laminaria tents.

Out of 224 cases of hypertonic saline or glucose there were 3 deaths i.e. 1.3%. There were no deaths in the 139 cases where hypertonic saline was combined with oxytocin drip and laminaria tents, nor in the 17 cases where hypertonic saline was combined with oxytocin drip only. Also there were no deaths in the hysterotomies. One has to weigh many

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factors before accepting hysterotomy as a choice for termination of pregnancy. Tubectomy combined with termination of pregnancy does not weigh heavily for accepting hysterotomy, as sterilization can be done by other methods, soon after or later.

Intra-amniotic urea with oxytocin drip has been used by Craft and Musa, (80 mgms of urea and 200 units of oxytocin). As urea is not freely available here, we have used hypertonic saline. Considering that 200 units may be too high a dose for our patients, we started with 40 units of oxytocin drip. If this strength did not start the pains even after 3 to 4 hours, the dose was gradually increased. It was observed that if 100 units of oxytocin drip was started soon after the intra-amniotic injection, the pains started quickly.

Hypertonic saline 20% was injected with all aseptic precautions after making sure that the needle was in the amniotic sac. Each time 20 to 30 cc of liquor was aspirated and an equal amount of the saline was injected by using a three way canula. In this series 60 to 200 cc of saline was used to replace an equal amount of liquor. It is essential to aspirate now and then while injecting to make sure that the needle has not entered into any vein. This precaution was meticulously taken in this series. Before removing the needle from the amniotic sac the needle was flushed with 5 cc of normal saline to prevent any spill of the hypertonic saline into the tissues causing necroses of the tissues.

Many gynecologists aspirate the liquor first and inject an equal amount of hypertonic saline. With this method there is a chance of the needle getting displaced without one's knowledge and inadvertently some hypertonic saline may be injected into the general circulation. Hence

simultaneous injection and aspiration, exchange method, is better than the total replacement method.

Soon after the injection of the saline, the patient is put in lithotomy position and laminaria tents are put in the cervical canal, the number depending on the patulousness of the cervix. The vagina is lightly packed. A drip of 540 cc Glucose is started with 100 units of oxytocin at a rate of 8 to 10 drops per minute. One drip usually, lasts for 10 to 12 hours. If proper pains did not start by the time the drip is finished, a second similar drip was started. Most of the patients aborted with one drip. The laminaria tents were removed if the patient did not abort in 24 hours.

Interval of Injection and start of Pains

In 60 patients the time of onset of pains was noted; 53 patients, 88.3% started pains before 12 hours, of these 9 started the pains before 5 hours and 2 patients after one hour after the injection. Other 7 patients commenced pains after 12 hours. Hence the author feels that the oxytocin drip should be started soon after the saline injection, and not to wait for the foetus to die. In the group where hypertonic saline and oxytocin drip was used (without laminaria tents) the pains started before 12 hours in only 42% cases.

Injection Abortion Interval in Hours

Injection abortion interval is reduced when saline is combined with oxytocin and laminaria tents, irrespective of the route of injecting the saline.

Details of Injection Abortion Interval

It was observed that 35.2% cases aborted within 20 hours with oxytocin and saline only and the number increased to 64.7% when laminaria tents were also combined.

Time (Hours)	Saline only II cases as control	Saline & Oxtocin	Saline by Abd. route oxytocin & Lamin. Tents	Saline by Vaginal route, Oxytocin & Lamin tents
Maximum	47	60	46 one case failed Hysterotomy	11.30
Minimum	24	10	4	11.30
Average	36	23	18	11.30

Time taken for abortion in hours	Hypertonic saline, Oxytocin and laminaria tents	Hypertonic saline abd Oxytocin	Hypertonic saline Vag. No lam. tent No Oxytocin	Hypertonic saline vaginal oxytocin & lamin tents
1 to 8	8			
9 to 10	10	2		2
11 to 15	41	2		
16 to 20	31	2		
21 to 24	17	3		
25 to 30	16	4		
31 to 35	5	1	2	
36 to 40	6	1		
41 to 45	4			
46	1	2		
Total	139	17	2	2

Comparison of Other Series

Author	Method	Year	Injection abortion interval in hours
Weingold et al	Hypertonic saline	1965	22.39
Das & Mukhopadhy	Hypertonic saline	1975	26.7
Present series	Hypertonic saline only	1976	36
	Hypertonic saline & oxytocin drip	1976	23.6
	Hypertonic saline Oxytocin drip and laminaria tents	1976	18.4
	Hypertonic saline vag. route, oxytocin and lamin. Tents	1976	11.30
Craft and Musa	800 mgms Urea and 200 Units Oxytocin	1971	19

Complications

There were no serious complications in this series, except 2 cases who required blood transfusion after abortion. One patient had fever for 24 hours. Only 1 case failed to abort and had to be subjected to hysterotomy, after 63 hours. There was no case of water intoxication, endometritis or maternal death.

Incidence of Retained Placenta

We observed that with the combination of hypertonic saline, oxytocin drip and laminaria tents the foetus is aborted followed soon after by the placenta in majority of the cases and the blood loss is minimum. The drip is removed half an hour after the abortion if it happens to be going on. If the pains were well established and the drip is finished another drip is not started and the patient aborts easily.

Author	Method	Incidence of retained Placenta
Kerenyi	Hypertonic saline	3%
Walton	Hypertonic saline	4.7%
Mackenzie	Hypertonic saline	10%
Das et al	Hypertonic saline	5%
Lischke	Hypertonic saline	
and	pitocin and	
Goodlin	laminaria tents	11%
Author	Hypertonic saline and pitocin	17.7%
	Hypertonic saline oxytocin and laminaria tents	5.7%

It is author's observation that the combined method does not interfere with the separation of placenta. On the contrary, the incidence of retained placenta is reduced and blood loss minimised.

Conclusion

1. The combination of intra-amniotic

saline with oxytocin drip of 100 units and laminaria tents is found to be a safe procedure for the midtrimester pregnancy termination.

2. Addition of oxytocin drip along with hypertonic saline does not add any more risk.

3. Introduction of laminaria tents does not increase risk of infection.

4. This trio combination definitely reduces the injection abortion interval.

5. Incidence of retained placenta is also reduced.

6. Laminaria tent in the cervical canal does help to reduce the injection abortion interval.

7. Blood loss is definitely reduced.

8. Hysterotomy is practically eliminated from the author's unit.

9. Tubectomy after the abortion is easily carried out in suitable cases either by laparoscope or by vaginal route.

10. It is safer to follow exchange method rather than the replacement method. Probably this technique is greatly responsible for the nil mortality in this series.

11. The fact remains that the swing towards hysterotomy is moving fast for mid trimester pregnancy, but its justification remains to be proved and accepted by all.

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