

LAMINARIA TENT IN EARLY ABORTIONS

(A Study of 600 Cases)

by

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As early as 1869 Hicks pointed out the effective, convenient dilatation of the uterine cervix brought about by the use of hygroscopic laminaria tents. The tent, made of dried seaweed, *Laminaria digitata*, was an ancient method of cervical dilatation which has recently been reintroduced in the wake of the legalisation of abortions in many countries. Newton (1972), Hale and Pion (1972), Manabe (1971), Eaton *et al* (1972), Niswander (1973), Palomaki and Little (1972) have all reported favourably on the use of laminaria tents for cervical dilatation in suction abortions.

In our practice, laminaria tents are used as adjuncts in suction evacuation of uterus for all first trimester abortions. During the last 3 years period, from 1973 to 1975, we have terminated 600 pregnancies with the help of laminaria tents. Our experience with this clinical adjunct to uterine evacuation is discussed in detail in this paper.

Materials and Methods

Women resorting to termination of pregnancy in the first trimester were selected for this study. It was made sure that the size of the uterus was less

than 12 weeks in all cases. Depending on the width of the cervical canal, a small, medium or large sterile laminaria tent was inserted. On the next day—i.e., 12 to 24 hours after the tent insertion, suction evacuation was performed with the help of suction curette, connected to the electrical suction apparatus a gentle curettage was performed at the end of the procedure, to make sure that the uterus was empty. The patient was observed for 4 hours and then sent home, with advice to report for routine check-up.

Analysis

The various indications for termination of pregnancy in the 600 cases are given in Table I. In all of them slow

TABLE I
Indications for Termination of Pregnancy

1. Failure of contraception	474	79.00%
2. Medical Indication	42	7.00%
3. Rape	37	6.17%
4. Failure of vasectomy	23	3.83%
5. Socio-economic	16	2.66%
6. Failure of I.U.D.	6	1.00%
7. Failure of tubectomy	2	0.34%
Total	600	100.00%

dilatation of cervix was obtained with laminaria tent, before suction curettage. The age of the patients ranged from 17 to 48 years, with a mean of 28.7. 450 women (75%) were between 21 to 35

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years. Fifteen were unmarried primigravidae, who were below the age of 20 years. 57.5% of the women (345) belonged to the low parity group, having 1 to 3 children.

In majority of cases, the laminaria tents had provided easy cervical dilatation, enough to pass the suction curette and complete the evacuation. The trauma caused to the cervix was minimum, which was especially marked in nulliparous (unmarried) women. In no instance, a cervical injury requiring suturing, was produced by this method of dilatation.

Eventhough the uterine evacuation was easy and quick, with minimal blood loss, there were 15 cases of incomplete emptying, requiring a second surgical procedure (D & C). In another 3 cases, the pregnancy continued uninterrupted.

In every fifth woman, there was stink at the time of the evacuation, when the laminaria tent was removed, indicating evidence of mild sepsis. This mild sepsis was otherwise harmless to the patient, but 7 of them developed severe pelvic infections, in the form of pelvic cellulitis, inflammatory mass and pelvic peritonitis.

Incomplete dilatation of the cervix due to poor rate of swelling of the laminaria tent was quite common. One woman out of every 10 had such problem, although evacuation could be completed in many of the cases without much difficulty. The incomplete emptying and continuation of pregnancy were due to the inadequate cervical dilatation. Tent insertion per sé had not produced any cervical injury or uterine perforation, but there was one case of uterine perforation caused at the time of evacuation. This case required laparotomy and repair. Sometimes great difficulty was experienced in inserting the laminaria

tent. On such occasions, a tent with a smaller diameter was used. Since the rate of swelling of the smaller tents was poor, it resulted in inadequate dilatation of the cervix leading to incomplete emptying of the uterus. The overall incidence of complications was 4.33% (Table II). It is observed that the over-

TABLE II
Complications

1. Incomplete abortion	15	2.50%
2. Pregnancy continuing	3	0.50%
3. Uterine Perforation	1	0.17%
4. Severe infection	7	1.16%
5. Cervical laceration	nil	—
6. Mortality	nil	—
Total	26	4.33%

all complications for the first trimester pregnancy termination are very much less, and this may be attributed to the use of the laminaria tent for slow dilatation of the cervix, prior to suction curettage.

Discussion

Hale and Pion (1972), in an attempt to study the rate of swelling of the laminaria tent in vivo, matched two series of patients for other variables such as parity and age, and analyzed at 2 different intervals. In one group the tent was left insitu for more than 24 hours and in the other for less than 5 hours. It was observed that enough dilatation of cervix (one cm.) was obtained in 5 hours time, but apparently dilatation continued upto 16 hours. In 3 hours time the cervical dilatation was one third less than that found after 16 hours. As Manabe (1971) had pointed out, it is meaningless to allow the tents to remain in place for more than 24 hours. Such a practice increased the incidence of infection and

provided no added advantage over shorter placement.

From these reports it is obvious that laminaria tent kept insitu for 5 hours will give enough cervical dilation to pass the suction curette and complete the evacuation. It is not necessary to retain the tent for 12 to 24 hours. If this method is followed the infection rate can be brought down to negligible level; and this is of help in office procedures where time factor is important.

The effect of laminaria tents on the cervix was studied by histologic technique. No significant differences, except for acute and chronic inflammation in the cervical stroma, were noticed. It could not be established that the mode of action of laminaria tent is through biochemical alterations. At present, laminaria tents are believed to work by hygroscopic swelling and slowly but steadily dilate the cervical os by mechanical rather than pharmacologic means. Long term studies are necessary to prove the hypothesis that gradual dilatation of the cervix with laminaria tents is less traumatic to the integrity of tissue than is acute surgical dilatation and therefore, may even reduce the incidence of cervical incompetency.

Summary

The laminaria tent as an aid for slow cervical dilatation for first trimester pregnancy termination in 600 cases has been studied. It is observed that uterine evacuations with laminaria tents are associated with a lower morbidity rate.

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