

LAMINARIA TENT AS CERVICAL DILATOR PRIOR TERMINATION OF PREGNANCY IN FIRST TRIMESTER

by

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Introduction

In the early and middle stages of pregnancy, obstetricians often need sufficient cervical dilatation before performing intrauterine manoeuvres. The use of Hegar's dilators is attended with risk of uterine perforation and cervical lacerations.

Laminaria (*Laminaria digitata* Sea tangle) is a species of seaweed. When dried, the stem (stipe) of laminaria is quite hygroscopic and is capable of dilating upto three to five times its original diameter.

Manabe 1971 has accrued a great amount of experience using laminaria tent as cervical dilator prior to abortion.

Eaton *et al* 1972 used laminaria tent as cervical dilator in 250 patients prior to uterine aspiration. In his experience there was effective dilatation without perforation of uterus and laceration of cervix.

Material and Methods

Two hundred patients attending Out

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Patients Department of Government Hospital for Women, Srinagar from June 1972 to March 1975 were taken for this study. Laminaria tents were used as cervical dilators prior to termination of pregnancy either by vacuum suction or evacuation. The cases were followed for 6 weeks after evacuation or uterine aspiration. The ages of patients ranged from 14-38 years. The parity is shown in Table I. Duration of gestation varied

TABLE I
Parity

Parity	No. of patients	Percent of total
0	10	5%
1-3	40	20%
4-6	130	65%
7-9	20	10%

from 4-14 weeks as shown in Table III. Indications for termination were as shown in Table II.

Prepacked tents were available from Norway. The tents in dry state have the appearance of smooth, small sticks approximately 6 cm. in length. They were available in 3 diameters; small (3-5 mm.); medium (6-8 mm.); and large (8-10 mm). Before insertion, tents were sterilized by soaking them in 99 per cent alcohol for 48 hours.

TABLE II
Indications for Abortion

	No. of cases	Percentage
Hypertension with pregnancy	80	40%
Diabetes	2	1%
Heart Diseases	8	4%
Multipara and unwanted pregnancy	110	55%
Total	200	100%

TABLE III
Gestational Period

Gestational age in weeks	No. of patients	Percentage
4-7	50	25%
8-10	120	60%
11-14	30	15%

After medical and social history was taken a detailed clinical examination was performed and vaginal examination was done to assess uterine size as well as condition of cervix. A mild vaginitis or cervical erosion were not considered contra-indications.

Insertion Technique

A small, medium or large sterilized tent was gently inserted into cervical canal until it had passed just beyond internal os. A gauze piece of 4" x 4" was placed inside the vaginal vault through loop of string. This avoids displacement of the tent and helps in easy removal. The patient was discharged with instructions to report back on the following day for vacuum suction aspiration or evacuation. In some patients tents were inserted early in the morning, 8 hours prior to aspiration on the same day. Following admission to hospital, vaginal packing and tents were removed and vagina cleaned with

antiseptic lotion. Vacuum suction and evacuation were done without anaesthesia. All patients were given prophylactically crystalline penicillin and streptomycin for five days.

Patients were observed in hospital for 4-6 hours and were discharged with written instructions to take their oral temperature daily and to report any fever over 100°F and any bleeding heavier than menstrual blood flow. They were given appointments for follow up examination in 4-6 weeks. Attention was paid to fever and abnormal bleeding, and pelvic examination was done to note any pelvic infection.

Results

The cervix softened remarkably with laminaria tent in place and no further dilatation was necessary. Dilatation was seen within 8 hours of insertion, with maximal effects at 24 hours after insertion as shown in Table IV. There were no

TABLE IV
Duration of Insertions of Tents in 200 Patients in whom Tent was used

Duration of insertion in hours	No. of patients	Percentage
8 hours	40	20%
12 hours	120	60%
24 hours	40	20%

cervical lacerations in our series. Four (2%) patients who reported temperature of 101°F were readmitted and temperature controlled within 2 days with broadspectrum antibiotics. In 6 (3%) repeat evacuation was done for incomplete evacuation.

In 16 (8%) patients there was severe uterine cramping which was relieved with antispasmodics.

In all patients tent remained in situ and all were found to have 8-12 mm. dilata-

tion of cervical canal at the time of evacuation as shown in Table V. The tent

TABLE V

Cervical Dilatation Resulting from use of the Laminaria Tent Prior to Uterine Aspirations and Evacuation

Dilatation (mm)	No. of patients	Percentage
8-9	40	20%
10-11	120	60%
12	40	20%

provided adequate dilatation to allow uterine aspiration without the necessity of additional mechanical dilatation in almost all cases.

There was no uterine perforation during insertion of the tent or in subsequent uterine aspiration or evacuation. In no case was amniotic sac ruptured by tent insertion in our series.

Different methods of termination were used after dilatation of cervix with insertion of laminaria tents as shown in Table VI.

TABLE VI

Method of Termination After Dilatation of Cervix with Laminaria Tent

Method of termination	No. of patients	Percentage
Vacuum suction aspiration	40	20%
Vacuum suction & evacuation	110	55%
Evacuation	50	25%

Discussion

The laminaria tent appears to be a physiological and effective dilator of pregnant cervix. Although mentioned quite frequently in the American Medical literature in the 1860's and 1870's, by 1900 this material seemed relegated to antiquity because of complicating infections. Modern sterilization techniques

have reduced this risk to the extent that recent series report infection rates averaging 2.3% according to Rovinsky (1971), Newton (1972) and Golditch and Glasser (1974). In our series infection rate was 2 per cent which corresponds to that reported by above mentioned authors. To lessen the risk of infection, the uterus should be evacuated within 24 hours after laminaria tent insertion. Eighty per cent of our cases were evacuated within 12 hours of insertion and 20 per cent within 24 hours.

The internal os was dilated upto 11 mm in 60 per cent of cases, upto 12 mm in 20 per cent of cases. Vacuum suction aspiration was done in 20%, vacuum suction and evacuation in 55%; and evacuation alone in 25% only. (Table VI). There was no need for mechanical dilatation in our series. In 88% in Golditch's (1974) series there was sufficient dilatation of internal os to permit insertion of a 9 to 12 mm. suction curette.

Mechanical cervical dilatation and sounding of the uterus before curettage have been responsible for some of the most serious complications of vacuum aspiration abortion such as uterine perforation and cervical laceration (Hale and Pion, 1972; Nathanson, 1972). For the same reason we avoided sounding the uterus and mechanical dilatation. In addition to decreasing the immediate dangers of cervical laceration and uterine rupture, we believe that the slow dilatation afforded by the laminaria tent may be expected to avert considerable trauma to the internal os, thus reducing the risk of cervical incompetency in subsequent pregnancies. There was no uterine perforation in our series as also in the series reported by Newton (1972).

No anaesthesia was required in our series. In 8 per cent of cases there were

severe uterine contractions prior to evacuation which were relieved by giving antispasmodics and most of them were in primiparae.

Laminaria tents have proved to be a useful adjuvant to the performance of the therapeutic abortion. Their application has markedly decreased the discomfort of cervical dilatation and has facilitated the performance of first trimester suction curettage or evacuation abortions without hospitalization.

Its ease of insertion, effectiveness, and apparent safety justify its use wherever cervical dilatation is required.

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