The problem of cervical incompetence in Malaysian women

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Introduction

THERE IS NOW general acceptance that cervical incompetence associated with recurrent mid-trimester abortions is a distinct, but uncommon, clinical entity. Even so, there is no lack of controversy about its precise aetiology. The diagnosis, too, is difficult to verify, depending, as it does, more on the clinical history than on any scientific determination of the competency of the cervix. In the circumstance, it is not surprising that its incidence, and the results of treatment, seem so variable.

We believe that a reappraisal of the problem of cervical incompetence is best served by analysing our own clinical experience with the condition.

Incidence

In the period, April 1968 to April 1972, a total of 20 cerclage operations was performed on 16 patients during pregnancy, at the University Hospital, Kuala Lumpur. Four had the procedure done twice; in two of these, the first operation failed. The group consisted of 9 Chinese, 5 Indians and 2 Malays. Their ages ranged from 18 to 38 years. During the same period, there were 9,033 deliveries, giving a ratio of 1 cerclage procedure for every 451 deliveries. When compared with other series (Weingold[10] 1 in 933; Barter[2] 1 in 1842; Nishijima[9] 1 in 953), this figure appears rather high, but can be explained by the fact that 7 of

the 16 patients were referred from other parts of the country.

Previous Abortions

There were 40 previous abortions amongst the 16 patients. Except for 1 patient, all had 2 or more abortions each. The one exception concerned a patient in her first pregnancy with a cervix dilated to 3 cm. at 22 weeks' gestation. She aborted before a cervical ligature could be inserted. Of the 40 abortions, only 2 occured before the 12th week of gestation; 18 occured between the 13th. and 15th. week of gestation, and the remaining 20 abortions took place between the 16th. and 28th. week of gestation. Table 1 shows the number of abortions per patient before treatment.

Table 1
Number of Abortions Per Patient Before Treatment

No. of Patients	No. of Previous Abortions	Total
1	1	1
5	2	10
7	3	21
2	4	8
		40

Previous Livebirths and Premature Births

There were 9 previous livebirths with gestation of 36 weeks or more amongst the 16 patients. These were infants born to mothers in their first pregnancies. In addition, 5 premature infants were born between the 29th. and 33rd. week of gestation; but all died in the neonatal period.

Of a total of 54 previous pregnancies, only 9 infants survived. This gives an infant-salvage rate of 16.6 per cent. Table 2 shows the outcome of previous pregnancies in the 16 patients before their first cervical ligature.

Previous Trauma to the Cervix

When we looked into the question of mechanical injury to the cervix, we were surprised that not one case had a past history of cervical amputation, conisation, Manchester repair or traumatic delivery. The most notable findings were:

a) a history of normal vaginal delivery on 9 occasions and premature delivery on 5 other occasions.

b) A history of 21 curettages in 40 previous abortions.

Table 2
Outcome of Pregnancies in 16 Patients before the First Cervical Ligature

Abortions	40
Premature births (between 29th. and 33rd. weeks) with death of the babies	5
Livebirths (after the 36th. week)	9
	54

Diagnosis

The diagnosis of cervical incompetence was made from a clinical history of recurrent mid-trimester abortions. In 4 cases, the diagnosis was confirmed by the finding of a cervix dilated to 3 cm. or more. Since all patients were seen during pregnancy, no hysterosalpingograms could be done. Care was taken to exclude other causes of habitual abortion. A sub-septate uterus, for instance, might give a clinical picture very similar to that of cervical incompetence.

Methods

Of a total of 20 cerclage operations carried out during pregnancy, 16 were by the method of Shirodkar and 4 by the method of McDonald[7]. In each of the 4 occasions when the cervix was dilated to 3 to 5 cm. with bulging membranes, the McDonald purse-string suture was used, mainly because it was easier to apply. The suture material employed was limited to either the Ethicon tape or braided nylon, depending on the surgeon's preference. Table 3 shows the period of gestation when cerclage was done.

Table 3
Time of Insertion of Cervical Ligature

Gestation in Weeks	No. of Cerclage done
Before 12 weeks	3
13 to 16 weeks	9
After 16 weeks	8
Total	20

Results

Of the 20 pregnancies which had cerclage

operations, 11 resulted in 12 liveborn infants (a set of twins included), 6 aborted, 1 delivered a premature infant which died soon after birth, 1 was lost at follow-up and 1 was undelivered. Table 4 shows the overall results of the 20 cervical ligature operations.

Table 4
Outcome of the 20 Cervical Ligature Operations

Abortions	6
Premature Delivery	
Alive	4
Dead	1
Livebirths after 36 weeks	8
Lost to Follow-up	1
Un-Delivered	1
Total Live Infants	12

Among the 16 Shirodkar sutures applied as a prophylactic measure before there was any cervical dilatation, the success rate was 56.2 per cent. In the 4 McDonald sutures applied as an emergency procedure with the cervix dilated to 3 cm. or more, the success rate was 50 per cent. The results show that this procedure is worth attempting even though the cervix is dilated and the membranes are bulging. Table 5 shows the outcome of the pregnancies after the insertion of the McDonald suture.

Table 5
Outcome of Pregnancies after McDonald Suture

Gestation in Weeks at Time of McDonald Stitch	*Cervical Dilatation (in cm.)*	*Outcome*
19	3	Aborted at 20 weeks
23	3	Livebirth at 37 weeks
26	5	Livebirth Twins at 35 wks
21	3	Aborted at 22 weeks

Method of Delivery

Of the 12 liveborn infants, 10 were delivered by the vaginal route following removal of the stitches; the remaining two had Caesarean section. The indication for operative delivery was diabetes mellitus in one patient and prolapse of the cord in the other. Most authorities agree that for patients with cervical incompetence treated by cerclage, the vaginal route of delivery is suitable and safe[2,4]. Caesarean section should be reserved for those with some obstetrical indication, or in the event when the suture cannot be removed.

Discussion

The aetiology of cervical incompetence remains obscure. Although traumatic delivery is generally held to be an important factor, in practice, few cases have been shown to have had any operative procedure like forceps, version, or extraction[1]. In the present study, for instance, 9 of the 16 patients developed recurrent mid-trimester abortions following the spontaneous vaginal delivery of their first pregnancies. In this circumstance, the possibility of normal vaginal delivery playing a role in the pathogenesis of cervical incompetence cannot be dismissed. Likewise, the significance of curettage in abortion must be considered. According to Jeffcoate[5], a woman may abort her first pregnancy for some chance reason. Dilatation and curettage then carried out to complete the process may leave the cervix permanently damaged. This view is supported by the findings of Forster[6]. He has shown that D & C for criminal abortions definitely carries a high risk of cervical incompetence in subsequent pregnancies. In the light of these observations, it would appear that the pregnancy cervix is vulnerable to mechanical damage and that this may be related to changes in the reticular fibres and collagen concentration in the cervix during pregnancy[3]. In contrast, the traditional view that operative procedures on the cervix in the non-pregnant state are important factors in the causation of cervical incompetence has probably been exaggerated. There were no patients in our series who had a history of cervical amputation, conisation, cautery, biopsy, repair or laceration. This is in agreement with the observations by Forster[6].

Our results suggest that cerclage is a very effective form of treatment for recurrent mid-trimester abortions due to cervical incompetence. In the present series, the infant salvage-rate without treatment was 16.6 per cent, whereas with treatment it was 55.0 per cent. Even better results, however, have been reported by Weingold (74.6 per cent)[10] and Barter (70 per cent)[2]. In cases with cervical dilatation of 3 to 4 cm., an attempt at cerclage is justified, provided the membranes are intact. In this situation, the McDonald suture is the method of choice. Like Naver[8], we have 50 per cent success with this technique. Forster[6], however, has reported 80 per cent success in 78 pregnancies with cervical dilatation of 2 to 5 cm.

Summary

A 4-year review of the incidence of cervical incompetence at the University Hospital, Kuala

Lumpur, between 1968 and 1972 is presented.

A clinical analysis of 16 patients who had undergone 20 cervical ligature operations is made. Of the 20 procedures, 11 resulted in 12 liveborn infants. The infant salvage rate before treatment was 16.6%, and following treatment, 55%.

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