THE MANAGEMENT OF PRETERM CERVICAL DILATATION IN HIGH RISK PATIENTS (CERVICAL INCOMPETENCE)

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SUMMARY

The study reviewed 213 cases of cervical cerclage and attempted to reevaluate the place and success of currently used 2 techniques of cervical cerclage (McDonald and modifid Wurm's). In patients of cervical incompetence, there was no statistical significant difference in success rate of McDonald versus modified Wurm's procedure except when the latter procedure was performed by single faculty member. Past obstetrical history of women had no significant relationship with the outcome of the operation.

Introduction

There are few clinical studies available in literature on low-risk patients to show that dilated cervix upto 2-3 cm before term (open cervix), does not necessarily indicate impending delivery (Floyd 1961; Parikh and Mehta 1961). Unfortunately, no controlled longitudinal studies are available on untreated high risk patients because of the general belief, as well as recent studies (Rush, 1979) indicate that previous late abortion or preterm delivery is an important risk factor for subsequent preterm birth. Moreover, the ethical aspect of depriving some cases from treatment may be questioned. A small sample of 18 cases with previous late abortion or preterm delivery, when treated conservatively by Shrotri (1980) for asymptomatic cervical dilatation during second or early third trimester, had premature delivery rate of 61.1 per cent.

From: Lady Hardinge Medical College and Associated Hospitals, New Delhi-110 001.
Accepted for publication on 7-1-86.

The present prospective study was conducted to reevaluate the place and benefits of cervical circlage procedure in these high risk Patients with preterm cervical dilatation without demonstrable uterine contraction and to determine the best, but simple technique of cervical circlage.

Material and Methods

One hundred and thirty-four women underwent a total of 143 cervical encirclage procedures in one obstetric unit at Lady Hardinge Medical College from 1st March, 1980 to 28th February, 1985 giving an incidence of one circlage procedure in every 104 deliveries. Review of history of prior pregnancies was critically done in each

case at first visit. In absence of classical history of cervical incompetence (i.e. second trimester loss with short and relatively painless labour), the patients were followed up in antenatal clinic every fortnightly with per speculum and per vaginum examination to detect early evidence of cervical effacement and dilatation. Besides relevant investigations, routine ultrasound scanning was done to determine gestational age, and exclude congenital malformations.

In the first 2½ years of study "modified Wurm's" procedure was used and almost all cases were operated by one faculty member. The results are compared with author's earlier 70 cases of cervical incompetence treated with modified Wurm's procedures (1974) done by multiple surgeon's of variable experience. In the next 2½ years, procedure used was McDonald (1957) procedure and this was done by 3 faculty members and 7 Resident staff.

All procedures were done under general anaesthesia in lithotomy position with the operating table in 30° Trendelenburg position. Material used for modified Wurm's procedure was 7 to 8 N Nylon and proline. Sutures were placed at right angle to each other McDonald procedure was performed with Single purse string suture of No. 5 silk. Index finger in cervix protected the amniotic sac from being pierced by the needle.

Post-operatively, progestins and systemic antibiotics were not used as routine. Combination of Pethidine and Phenargan was given 8 hourly for 24 hours. Labour inhibiting drugs like Isoxsuprne was given for 24 hours initially but later omitted as it was found to be unnecessary. Patients had limited rest for 72 hours and were discharged on 5th or 6th day following surgery. They were followed every 15 days in antenatal clinic till 38 weeks, when they were admitted for stitch removal and delivery.

Eighty-seven low risk cases with open cervix without previous history of spontaneous late abortion or preterm labour, acted as control cases for cases of emergency cerclage procedure and likewise followed till delivery for pregnancy outcome and morbidity. Criteria of success of cerclage procedure was fetal survival rate irrespective of period of gestation. Student 't' test and X^2 test were used for statistical analysis and were considered significant if $P < 0.05$.

Results

Previous pregnancies totalled 349 with previous fetal loss amounting to 93.7 per cent. Surprisingly, only 1 in 5 gave classical history of previous short and relatively painless labour. The indications for surgery were divided into 6 broad categories (Table I). Forty-six procedures were per-

TABLE I
Indication

	Cervical cerclage		
	Elective	Emergency	Total
H/o Single Second trim. abortion	2	6	8
H/o >2 second Trim abortion (2-7)	29	28	57
H/o Second trim abortion and prior cervical trauma	2	4	6
H/o prior successful circlage	9	1	10
Preterm cervical dilatation in women with H/o premature labour	—	39	39
H/o Premature labour and second trim abortion	4	19	23

formed electively and the rest were done in emergency when the cervix was already effaced and/or dilated.

The average duration of pregnancy at operation was 21.8 ± 5.20 weeks. Table II shows the break up of cases according to gestational age at operation. The overall success rate (Table III) of cervical cerclage procedures was 82.5 per cent. There was no significant difference in success rate of McDonald versus modified Wurm's procedures except when the latter procedure was performed by single faculty member. It is evident from Table IV, that past obstetrical history had no significant relationship with the outcome of the operation.

Untreated control cases with open cervix, had premature delivery rate (prior to 37 completed weeks) of 3.44% which is significantly less than 23.07 per cent in these high risk patients even with cervical circlage ($P < 0.05$).

Morbidity: Immediate pregnancy loss following cervical cerclage (within 48 hours) was 2.09 per cent, while 2.79 per cent cases required second cerclage for loose suture on follow-up i.e. 5-57 days. None of the patient had post-cerclage chorioamnionitis severe enough to force immediate suture removal.

TABLE II
Gestation at Time of Cerclage

Weeks	No.
14	31
14+-16	25
16+-20	40
20-28	24
>28	22

TABLE III
Success Rate

Success rates	%	
Overall success rate	82.51	
Emergency	78.35	
Elective	91.30	
Modified Wurm's procedure		
Single surgeon	90	$P < .01$
Multiple surgeons	77.14	
McDonald procedure	75.36	
Two procedures (same pregnancy)	75	

Comments

The findings of this prospective study suggest that cervical incompetence continues to remain a problem that often defies prediction on women's previous obstetric history alone. On therapeutic aspect, considering the overall success rate of over 80 per cent, the place of cerclage procedure in averting preterm births in cervical incompetence cases is unquestioned. Further-

TABLE IV
Fetal Survival According to Indications

	Post cerclage foetal survival (%)			
	No.	Term	Preterm	Total
H/o Single trim abortion	8	100	90.00	75
H/o >2 second trim abortion (37 wks)	57	100	72.22	95
H/o second trim abortion with prior cervical trauma	6	100	50	83.33
H/o prior successful cerclage	10	100	0	80
H/o premature labour with painless cervical dilatation (11 wks.)	39	96.29	38.46	77.5
H/o Premature labour and second trim abortion	23	100	36.36	69.96

more, as authors had to depend much more frequently on preterm cervical effacement and dilatation for diagnosis of cervical incompetence in the absence of classical history, the results of even emergency cerclage procedure (i.e. delayed treatment) were more than satisfying (78.35%).

The review of literature of success rates (43 to 100 per cent) of various techniques (Shirodkar, 1956; McDonald, 1957; Hafner, 1961) as well as our experience with outlined above 2 techniques has shown that, at present, no technique of cervical cerclage is any way superior to others. In teaching hospital set up, where operation is done by multiple surgeons of variable experience, there was no statistical difference, between McDonald and modified Wurm's procedure (75.36 versus 77.14 per cent). This suggests that each surgeon can favour one simple technique in which he or she is trained and can use the same, regardless of surgical indication or condition of cervix. However, the data presented here also indicates that success rates of 'a technique' could be improved if the procedure is done electively; done by single experienced surgeon; and by giving more personalised antenatal care to these high-risk patients. Nevertheless the cervical cerclage procedure is a specialized operative procedure that should be performed by trained surgeon, aware of its pitfalls and complications that should be avoided with meticulous care.

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