CERVICAL INCOMPETENCE: RESULTS WITH THE OPERATIVE TREATMENT DURING PREGNANCY

(Review of 45 Cases of Incompetent Cervix)

by

V. R. Ambiye,* M.D., D.G.O.
R. M. Saraogi,* M.D., D.G.O., F.C.P.S.
M. Y. Rawal,** M.D., D.G.O.

and

S. K. Joshi,*** M.D., D.G.O.

Increasing interest has been taken in the subject of incompetent os of the cervix as a cause of habitual and recurrent abortions over last 30 years, after the publication of an interesting paper by Lash and Lash in 1950. Shirodkar's Publication on cervical incompetence in 1953 created a sensation and aroused a great deal of interest amongst gynaecologists all around the world. He devised his own operation of encircling the cervix at the level of the internal os, popularly known as "tightening of the internal os". He described the signs and symptoms of the cases suitable for this type of operation. Various modifications were reported thereafter but all with the same principles described by Shirodkar.

Here is a review of our experience with 45 cases of cervical incompetence studied at B. Y. L. Nair Ch. Hospital and T.N. Medical College, Bombay 400 008 during 8 year period from January 1971 to December 1978. During this period there were 20750 deliveries giving us the incidence of 2:922.

*Ex. Registrar.
**Professor.
***Late Prof./Head of Dept.
Department of Obstetrics and Gynaecology, T.N.M.C./B.Y.L. Nair Ch. Hospital, Bombay 400 008.
Acceptetd for publication on 18-6-80.

Material and Methods

In this series 45 cases of incompetent cervix on whom circlage operation was performed are included. On 10 patients circlage operation had been performed in previous pregnancy and they required operation during present pregnancy also. All the cases were diagnosed during pregnancy. They were thoroughly investigated to rule out other causes of abortion. A detailed record was kept regarding age and parity, past obstetric history, details of examination at bi-weekly intervals, period of gestation at operation, period of gestation at delivery, mode of delivery, operative details and postoperative follow-up, follow-up in successive pregnancies and its outcome as and when possible.

Patients in whom cervical insufficiency was suspected as a cause of habitual abortion were supervised by bi-weekly examinations. Cervix was inspected for the evidence of dilatation and effacement. Only those cases showing progressive

dilatation and effacement were hospitalised and subsequently treated. After initial conservative treatment with uterine relaxants, depot progesterone, sedation, and complete bed rest in Tredelenburg position, patients were taken up for circlage operation either classical Shirodkar's or Mac Donald's operation depending upon the availability of cervical tissue.

All the patients were hospitalised postoperatively for a minimum period of one week. All the cases were given suitable antibiotics, sedatives, uterine relaxants, and depot progesterones. They were followed up in antenatal clinic once a week. Suture was kept upto 38 weeks or in early labour whichever is earlier.

Results

Majority of the cases, 27 (60%) were from the age group 20-25 and parity 3-5. With increasing age and parity the cervical incompetency becomes less severe. One may postulate that scarring and inflammation incident to each pregnancy may give the cervix more resistance to offer during succeeding pregnancy. Probably uterus also becomes more spacious so that intrauterine pressure diminishes and there may be diminished response to oxytocics.

In 15 cases no history suggestive of any obstetrical or gynaecological trauma was available. In the remaining cases, commonest cause was some sort of obstetric trauma such as prolonged labour, forceps, cervical tears during past delivery in 13 (28.86%). The other causes included prior D & C in 8 cases, dilatation for dysmenorrhoea in 2. tracheoraphy in 1, conization or cervical amputation in 4.

Classical Shirodkar's operation was performed in 20 cases and Mac Donald's in 25 cases. Selection of anaesthesia was entirely operator's choice. General anaesthesia was used in 20, spinal in 19 and in 6 cases opration was done under local anaesthesia with heavy sedation. The various materials used for cerclage were merselene tape in 7, black linen in 5. and braided nylon in 33 cases. The selection of material depended upon its availability rather than operator's choice. Most of the operations were performed between 18 to 28 weeks of gestation.

Table I shows pregnancy results and its relation to timing of the operation. Nine cases aborted in spite of the operation, 2 having bucket handle tears of the cervix and 1 had cervicovaginal fistula. In 1 case cervical tear extended in the broad ligament comprising incomplete rupture. In the remaining 5 cases suture had to be removed postoperatively due to strong tetanic uterine contractions in spite of heavy sedation and uterine relaxants. Thirty cases reached term, 5 had premature livebirths. These 35 cases had no

TABLE I

Pregnancy Results and its Relation to Timing of Operation

Results	No. of cases (%)	Timing of the operation (wks.)			
		16-18	19-22	23-28	29-30
Abortion	9 (20%)	2	1	5	1
Reached term	30 (66.6%)	4	22	4	—
Premature Live Birth	5 (11.2%)	3	2	—	—
Still Birth	1 (2.2%)	—	—	1	—

difficulty in vaginal delivery after removal of the suture. One case had macerated stillbirth. This case never had proper follow-up after discharge from the hospital and was admitted with severe sepsis and endotoxic shock as an emergency. In most of the cases who aborted in spite of the circlage, the timing of the operation was 23-30 weeks (6 out of 9). Probably they were operated late when process of abortion was well established.

We feel that proper selection of the cases, postoperative follow-up and proper timing of the suture removal could have prevented most of the complications.

Discussion and Conclusions

In this series of 45 cases of incompetent cervix treated by circlage operation, 10 underwent repeat operation. Nine cases aborted in spite of circlage and did not reach viability. Thirty cases reached term, 1 was premature stillbirth and 5 were premature livebirths. Hence, number of surviving infants were 35. Prematurity rate (less than 2 kg) was 13.2%, foetal salvage rate rate was 77.7% and success rate (cases reached upto term) was 66.6%. Probable causes of failure of the operation were improper selection of the cases, infection, accidental rupture of the membranes, and suture not holding as expected the pressure of the growing uterus during pregnancy.

We also had opportunity to study 10 of these cases in between the pregnancies. Hysterogram done on these cases in non-pregnant state revealed funneling deformity of the internal os. All 10 cases underwent repeat circlage operations in successive pregnancies.

Detailed history taking revealed etiological factors such as obstetrical or gynaecological trauma to the cervix in 30 out of 45 cases. Most of these etiological factors were preventable.

Thus surgical repair of incompetent cervix during pregnancy represents a major advance in the battle of the obstetrician to reduce abortion and prematurity rate, but it is not a panacea for all abortion and premature labour problems and should not be used as a matter of routine.

References

1. Mac Donald, I. A.: J. Obstet. Gynec. Brit. C'Wealth 70: 105, 1963.
2. Shirodkar, V. N.: J. Obstet. Gynec. India. 3: 287, 1953.