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Editorial

THE INCOMPETENT CERVIX

Many an obstetrician today thinks that the problem of the incompetent cervix is solved. The diagnosis is made without proper examination and at times with history alone, and indiscriminate cerclage of cervix carried out, with high rates of failure. The problem of Incompetent Cervix deserves a re-assessment.

Nicholus Eastman, when he was the editor of "Obstetrics and Gynec. Survey" commented: "Because cerclage is a simple matter, let not our enthusiasm cloud our diagnostic judgement, otherwise many a cervices will be sutured unnecessarily and to no avail."

Although the "Torn Cervix" was recognised as the cause of repeated abortions in 17th century, it was around 1950 that Palmer in Europe and Lash and Lash in America defined the "Incompetent Cervix". The most important breakthrough occurred in 1955, when Shirodkar: one of the most illustrious presidents of our Federation reported his first series of cerclage operations during pregnancy using homologous Fascia Lata. Prior to this, the treatment of incompetent os was undertaken only in non-pregnant state. Within 3 years, in 1957, McDonald simplified the cerclage operation by using non-absorbable suture at a lower level. In 1965, Benson advocated Abdo-

minal approach for cases not suitable for vaginal route because of the loss of cervical lips. Numerous modifications have been devised, but in principal, the operation can be divided into two types: High or Low Cerclage, and With Tape or With String.

The cervix is defined "Incompetent" when it is unable to retain an intrauterine gestation until term, because of deficiency in structure or function. It can occur in Primigravida and Multigravida, much commoner in the later. The reported incidence is usually: 1 in 500 to 1 in 2000 pregnancies although in referral centres, it can be as high as: 1 in 125 pregnancies.

The physiology of cervical competence is not properly understood till date. The mechanism involves a complex physiological process of uterine muscle re-arrangement as well as biochemical changes in the cervix. Equally baffling is the response to trauma. With similar type of trauma, the cervix may not produce any physiological alteration in subsequent pregnancy in some cases, while in some it may lead to classical incompetence, and yet in others, the end result may be stenosis and cervical dystocia.

Trauma to the cervix-as judged by retrospective history-forms the main aetiological factor. In the present times, rather than

traumatic labour, the trauma of induced abortion as a cause is rising. Congenital malformations of the uterus may be associated with cervical incompetence even when the malformation does not involve the cervical canal. Low placental attachment tends to open up the cervix early. However, in all the series, there will remain about 30% of cases in which no obvious cause can be pin-pointed.

The classical history of a case of cervical incompetence is: Painless cervical dilatation in mid-trimester with bulging membranes. Later, the membranes rupture without painful uterine contractions, the foetus expelled out almost painlessly, and is usually alive at birth. In some cases, the signs and symptoms may be clear-cut, but not so in every instance. Hence the differential diagnosis from other causes of mid-trimester foetal loss is extremely important. It is essential to remember that cervical dilatation is the terminal phase of all pregnancy losses, and its mere presence does not necessarily mean: Cervical Incompetence.

Preconceptual diagnosis of incompetent cervix is never definite. The accepted sign is: An internal os dilated to 8 mm diameter and allowing No. 8 Hegar dilator through, without resistance or pain. The other signs like: Measurement of internal os diameter by Hysteroscopy or with Rubber-Balloon test, have also been used. However it is important to remember that none of these signs may be prognostically correct indicator of incompetent cervix during subsequent pregnancies.

It is of utmost importance to establish a High Risk Group with the suspected diagnosis of "Incompetent Cervix". Serial clinical and ultrasonographic examinations are carried out after 10 weeks' gestation every fortnightly until the 28th week. This will outline the A.P. and lateral diameters of the internal os and the length of the closed cervical canal. For such an ultrasonographic evaluation, the bladder should not be overdistended. At 10 to 12th week, the mean diameter of internal os more than 1.7 cms and the closed cervical canal length

less than 3 cms would be a warning sign. Repeat ultrasonogram at 14th week indicating the internal os diameter more than 2 cms and closed cervical canal length less than 3 cm is a definite parameter for the correct diagnosis, and would indicate the need for cerclage operation. At the 14th week of gestation the scan will facilitate the visualisation of any congenital foetal anomaly, to locate the placenta, and to undertake amniocentesis for further exclusion of genetic disorders of the foetus. If the patient is first seen at 20th week of gestation or later, the internal os diameter of more than 2.5 cms will indicate the cervical incompetence. After 28th week the open cervix is not an indication of cervical incompetence unless the cervical canal length is less than 2 cms and the membranes are bulging.

With the aid of ultrasound, very accurate measurement of the internal os diameter in its natural condition is possible by taking the mean of AP and lateral diameters at the level of internal os. Measurement of the length of close cervical canal and the lips of cervix can give a far better prediction of cervical effacement. The digital palpation by an enthusiastic obstetrician may overstretch the soft cervical canal during pregnancy, thus giving a false impression of Incompetence. Internal os may dilate earlier than external os in congenital type. The cervical effacement is difficult to be judged without sonography especially when the cervix is torn into small tags. Post-operative digital palpation is painful and inconclusive, and herein lies the importance of ultrasonography for follow-up. Finally, consistent standard norms can be maintained for repeated evaluation, with photographic records, while undertaking serial ultrasonographies.

A planned cerclage after definite diagnosis should be the aim of treatment rather than the emergency procedure, as the latter is associated with high failure rate. Cerclage should never be performed when the membranes have ruptured, painful uterine contractions have set in, in presence of bleeding: revealed or retroplacental haemorrhage, with clear or probable evidence of foetal anomaly and also when cervix is dilated

upto 5 cms or more. An ideal cerclage suture should have good tensile strength, should be non-irritant, must not cut through the soft pregnant cervix, must not slip down, should be easily identifiable for easy removal, and must have elastic memory to maintain the occlusion. The mersilene (Polyester) tape is the best available suture till date, but needs improvement as it has no elastic memory. Mixing polyester fibres with nylon in desired proportion can produce the adequate elastic memory. The tape cerclage is superior to the string cerclage and High cerclage at the level of internal os will give overall good result with the use of polyester tape.

In cases with absent or badly torn cervical lips, the vaginal route is not feasible. Abdominal cerclage as described by Benson could be used whenever indicated, by 14th week of gestation. Since the procedure requires gentle levering out of the uterus, an adequate vertical abdominal incision is preferred. The utero-vesical fold of peritoneum is picked up, divided, and the bladder retracted down. On the lateral aspect of internal os, one would notice many dilated veins, which tend to drain off with elevation of fundus. Careful dissection performed between the blood-vessels and lateral wall of the uterus at the level of internal os while placing two fingers of the operator behind the post. lip of broad ligament and retraction of the vessels by means of vein retractor would enable a safe puncture of the post. leaf by a curved hemostat, thus preventing the injury to the dilated veins very close to the uterus and the perpendicular branches supplying the myometrium. The tape should be tied medial to this sheath to prevent post-operative occlusion and congestion of these blood-vessels. It is important to note that the tape should be at the same level on each side of cervix, or truly at right angle to the uterine axis. The fundus is then repositioned in the abdominal cavity and tape ends pull-

ed upwards, so that the membranes recede upwards, which is also aided by the assistant's two fingers milking up the lower portion of uterus. After tying the tape (surgical knot) the ends are anchored to the sides and the peritoneum closed. One should never try to push the hemostat bluntly through the leaves of broad ligament, as it would lead to the damage to the thin-walled veins on the side of the cervix producing torrential uncontrollable hemorrhage, often precipitating uterine contractions. Benson in his original report of 13 cases encountered two cases of serious hemorrhage. Usually abdominal cerclage has high success rate as compared to the vaginal route in these worst types of cervical incompetence (95% success). If however premature labour does set in, it would mean removal of suture by abdominal route.

Cervical cerclage operation can by itself lead to infection (more so if performed as emergency), rupture of membranes, premature labour, placental separation and even rupture of uterus. Cervical tear or detachment of cervical lip can occur when the string suture is used. Strangely enough, in some cases, cervical dystocia is noted after removal of the ligature, needing Caesarian operation. This shows the unpredictable nature of the cervix.

Of late, the good result of cerclage operation has prompted many obstetricians to utilise it as prophylaxis in cases like: Twin pregnancy, Low placental attachment, and in cases with past history of premature labours without cervical signs of incompetence and cases with open cervix at 28 weeks without evidence of effacement. Prophylactic cerclage is not indicated as its usefulness has not been proved in properly controlled trials. Indeed in one trial, it was shown that the untreated cases went further to maturity and the treated cases terminated

earlier in 20%, 2% aborting immediately due to the operation itself. Prophylactic cerclage gives a false sense of security as the unidentified main aetiological factor will produce abortion inspite of the cerclage. The success rate of cerclage will actually fall by its indiscriminate use. It would be wise to remember that if the only tool you have is a hammer, you tend to see every problem as a nail.

To summarise, serial ultrasonograph today can play important role in the early diagnosis and follow-up of treatment. A planned high cerclage with polyester tape (intermingled with nylon fibres) and the use of abdominal route whenever indicated, should give a success rate much higher than ever achieved.

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