CERCLAGE OPERATIONS IN CERVICAL INCOMPETENCE
A review of 40 cases

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SUMMARY

Forty women diagnosed to have cervical incompetence during pregnancy were treated with cerclage operations. The pregnancy outcome and the complications of cerclage were monitored. Cervical incompetence was seen mostly in multiparous women and more than one third of them had past history of some form of cervical trauma. The overall foetal survival was 83.7 percent with cerclage and the complications were minimal.

INTRODUCTION

Cervical incompetence is one of the major causes of habitual abortion (in second trimester) and premature deliveries,the prevention of which continues to be a challenge to modern obstetrics. The cervix is defined as incompetent when it is unable to retain the intrauterine pregnancy until term because of deficiency in structure or function. It is more common in multiparous women and is only rarely seen in first pregnancy. According to various estimates incidence varies between 0.05 to 1 percent of all pregnancies. This accounts for 0-2 percent of all abortions and 16 to 20 percent of abortions in the second trimester (Stromme and Haywa, 1963). Currently accepted method of treatment of incompetent cervix during pregnancy is suturing of the cervix under anesthesia. Today cerclage operations offer a ray of hope to women with incompetent cervix.

We present a review of 40 cases of cervical incompetence treated with various cerclage procedures and the pregnancy outcome.

MATERIAL AND METHODS

The study consisted of 40 consecutive patients who underwent cerclage operations

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for incompetent cervix at out hospital. All the patients were diagnosed on the basis of typical previous obstetric history and open os on vaginal examination. The suspicious cases were subjected to weekly vaginal examinations to identify premature cervical effacement and dilatation or distension of lower uterine segment. The patients with typical history were admitted at the first visit and investigated to exclude other causes of habitual abortion and preterm delivery.

Following diagnosis, all the 40 women underwent Cerclage procedures. In 26 of the women it was done as an emergency procedure.Warm's procedure was done in patients who presented in late mid trimester and early third trimester (20-32 weeks). McDonald's procedure was done in patients who presented in early mid trimester (14-20 weeks) and Shirodkar's procedure was done in patients (as an elective procedure) in mid trimester (14-20 weeks). All the patients were started on tocolytics and progestogens and the same were continued till 37 weeks of gestation. Most of the patients were kept in the hospital till delivery. Few were discharged after 7-14 days after making sure that the cerclage was in position. Cerclage was cut at term except when there was active bleeding or rupture of membranes or good uterine contractions. Type of delivery and perinatal outcome were analysed.

OBSERVATIONS

Incidence of cervical incompetence was high in the age group of 20-30 years (85%). None of the women were primiparous. Sixty percent of them were para three or more. In fifteen patients there was previous history of cervical trauma and another five women had other predisposing factors like multiple pregnancies and placenta previa (Table I).

TABLE I
PREDISPOSING FACTORS FOR CERVICAL INCOMPETENCE

	No. of Patients
1. Previous trauma	
Manchester Repair	2
Cervical amputation	1
Cervical Tear	5
Difficult breech delivery	2
Dialatation and Evacuation	5
2. Twin Pregnancy	2
3. Low-lying placenta	2
4. Hydramnios	1
TOTAL	20

Three types of cerclage procedures were done in this group of 40 patients, twenty six women underwent Wurm's procedure, ten underwent McDonald's procedure and in four Shirodkar's procedure was done. Twenty three of the procedures were done during the preterm period and the remaining seventeen in midtrimester. The stitch was usually cut at 37 weeks of gestation or when patient went into labour.

Table II outlines the type of cerclage and the outcome of pregnancy. Out of the 26 women who had Wurm's procedure three women aborted and 20 continued to term pregnancy. Sixteen of these women delivered spontaneously where as in four women caesarean section was done for obstetric indications like CPD in three and breech in one. All the babies were normal. Three women in this group had preterm deliveries

(Two women had twins). Three neonates from among the twin pregnancies died of prematurity and respiratory distress syndrome.

TABLE II
TYPE OF CERCLAGE AND OUTCOME OF PREGNANCY

Type of Cerclage	No.of patients	Abortion	Mode of delivery			
			Term (SVD)	Term (LSCS)	Preterm (SVD)	Preterm (Forceps)
Wurm	26	3	16	4	3	-
McDonald	10	-	5	1	3	1
Shirodkar	4	-	1	2	1	-
Total	40	3	22	7	7	1

In the group of ten women who had McDonald's procedure, six continued to term pregnancy following cerclage. Five delivered spontaneously and one underwent caesarean section. Four women had preterm deliveries (Three spontaneous vaginal delivery and one low forceps delivery). All the neonates in the group were alive and well.

In the third group of four women who underwent Shirodkar's procedure (This procedure was done as an elective procedure), three continued to term pregnancy two of whom required caesarean section and one woman delivered spontaneously. One woman went into preterm breech delivery and the baby died because of prematurity.

The overall caesarean section rate among the study group was 17.5 percent, done primarily for associated obstetric indications.

Complications because of cerclage procedures are listed in Table III. Immediately after cerclage one woman had traumatic rupture of membranes and another had severe bleeding from cervix. Two women had premature rupture of membranes. In two

TABLE III
COMPLICATIONS OF CERCLAGE

Immediate	No. of patients
Traumatic rupture of membranes	1
Haemorrhage	1
Premature rupture of Membranes	2
Displacement of sutures	2
Cervical lacerations	3
Chorioamnionitis	2

women sutures had cut through at term. Three women had cervical lacerations during labour. There was no prolongation of first or second stages of labour and no case of rupture of uterus or cervical dystocia was seen. Chorioamnionitis was seen in two patients.

DISCUSSION

A recognised cause of habitual late abortions is the incompetent internal cervical

os. The basic defect in cervical incompetence is the weakness of the "Sphincter Mechanism" of the cervical internal os, overcome it and cause dilatation of the cervical canal, the mechanical dilatation of the cervix is liable to cause uterine contraction and delivery of the contents of the gravid uterus (McDonald, 1980).

Cervical trauma in previous pregnancies is the most common cause of cervical incompetence. McDonald (1980), reported that, of all women with cervical incompetence 95 percent had been pregnant o73 previously, 93 percent have an obstetric history of one or more abortions in the second trimester of pregnancy and 68.8 percent have a history of cervical dilatation and curettage, chiefly for termination of pregnancy or as treatment for dysmenorrhea. Wright et al (1972) showed that there was a ten fold increase of abortion in the second trimester among women who had undergone a previous termination of pregnancy.

In the present study group all the patients were multiparous. Fifteen patients had specific history of previous trauma to cervix, five of whom had dilatation and evacuation.

Congenital defects are rarer and according to McDonald (1963) are the cause of no more than two percent of all cases of cervical incompetence. This is generally the causative factor when cervical incompetence occurs in first pregnancy. Relative or functional cervical incompetence can occur in multiple pregnancies, placenta previa or low-lying placenta and hydramnios. In these patients cervical incompetence is usually temporary (occuring only in the current pregnancy) (Golan et al, 1989). In the present study we had the above predisposing factors in five women. Two had twin pregnancy, two had a low-lying placenta and one had hydramnios.

Controversy exists as to the treatment of cervical incompetence. Surgical treatment has been the mainstay of treatment and a variety of cerclage procedures have been described in the literature.

Prior to the Shirodkar's stitch the majority of attempts to correct the incompetent cervix had been directed towards cervical repair in the non pregnant patient (Lash procedure, 1950). The success rate reported by Lash and Lash was 94 percent foetal survival, as compared with 11 percent before suturing. However the important complication reported was a fifty percent infertility rate among women who had undergone Lash procedure. In 1955 Shirodkar described a method of surgical treatment of cervical incompetence during pregnancy with successful pregnancy outcome between 75 to 85 percent. In the present study Shirodkar's procedure was done only in four women with successful pregnancy outcome in three of them, The efficacy of this procedure has not been investigated in controlled studies and the procedure itself is difficult when there is a marked dilatation of the cervical canal, or protrusion of the foetal membranes.

McDonald (1957) described a simple method of cerclage which is generally chosen for emergency cerclage Golan et al (1989) reported an improvement in foetal survival rate from 69 to 92 percent in a series of 226 cases of cervical imcompetence treated by McDonald cerclage. This method too has never been investigated in a controlled prospective study. In the present study group ten women underwent McDonald cerclage, six of whom continued to term pregnancy and the remaining four had preterm deliveries. All the

neonates in the group were alive and well.

Hefner et al (1961) described Wurm's suture which was a simple mattress suture applied under short general anaesthesia. They reported hundred percent effectiveness without any complications. Jain et al (1986) from Delhi reported on pregnancy outcome in group of 143 cases of cervical cerclage. They used modified Wurm's procedure or McDonald's procedure. 23.07 percent of preg nancies had preterm deliveries and the overall foetal survival was 82.31 percent.

In the present study group 26 women underwent Wurm's procedure, twenty of them continuing their pregnancy till term with all the babies living and normal. Three women however went into preterm labour (Two twin pregnancies) with a foetal survival of 78.5 percent. Three patients in this group aborted.

The overall foetal survival was 83.3 percent in the present study group of cervical cerclage pregnancies. This was significantly more as compared to the outcome of their previous pregnancies.

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