

Morbidities of cervical cerclage: Experience at a tertiary referral center

Saba Mubasshir, Shama Munim, Ghulam Zainab

The Aga Khan University Hospital, Karachi.

Corresponding Author: Shama Munim. Email: shama.munim@aku.edu

Abstract

The Perinatal morbidity and mortality associated with pre-term delivery is well known. Cervical incompetence or short cervix is a risk factor for the condition and cervical cerclage is the management option for such cases. The objective of the study was to determine the frequency of operative morbidities of cervical cerclage. All women undergoing cervical cerclage from April 2007 to December 2009 at the Aga Khan University Hospital served as the study subjects. Findings suggested that the risk of developing ruptured membranes after cervical cerclage was 10% and that of pregnancy loss was 8.6%. The risk of cerclage-associated complications like rupture of membranes, bleeding and chorioamnionitis was small. The risk of delivery before 34 weeks of gestation was 15.7%.

Keywords: Cervical cerclage, Morbidities, Preterm.

Introduction

Cervical insufficiency or short cervix is defined as the failure of cervix to retain an intrauterine pregnancy until term. It occurs in approximately 1% of all pregnant women. However, it rises to 8% in those who suffered a second or third trimester pregnancy loss.¹

Pre-term birth accounts for 75-80% of all perinatal mortality and is an important determinant of neonatal and infant morbidity, including neurodevelopment handicaps, chronic respiratory problems, infections, NICU admissions and ophthalmic problems.²

It has been recognised that the prevention of preterm birth is crucial to improve pregnancy outcomes.^{3,4} However, the exact etiology of pre-term birth is unknown. The risk factors for cervical incompetence include recurrent mid trimester losses, previous pre-term pre-mature rupture of membranes before 32 weeks, cervical length of less than 25mm prior to 27 weeks and prior cervical trauma (e.g. repeat Termination of Pregnancy (TOP), miscarriage, and cone biopsy).

Cervical cerclage has been used widely in the management of pregnancies considered to be at high risk of pre-term delivery. Its role is to provide mechanical strength and act as a barrier to prevent infection.⁵ It is an invasive procedure and carries certain complications. Therefore, its

potential benefits have been questioned.⁶

The morbidities associated with cervical cerclage include pre-term labour, rupture of membranes, chorioamnionitis and displacement of the suture. It has also been reported that maternal infections rise by two-and-a-half fold.⁷ In addition, cervical scarring leading to significant laceration is also reported. The incidence of difficulty in removing cerclage is about 1%.⁸ We embarked on a prospective study to establish the frequency of such complications in the population.

Patient, Methods and Results

The study was conducted at the department of Obstetrics and Gynecology, Aga Khan University Hospital, Karachi from April 2007 to December 2009. Seventy women who underwent cervical cerclage during the period were included in the study except for women with multi-foetal gestation who were excluded.

The study, which was approved by the Aga Khan University Hospital Ethical Review Committee, comprised

Table: Demographic data and other important statistics.

Variables	Results
Age in years	29.4 ± 5.2
Gestational age	15.1 ± 4.9
Parity	
Prim-gravida	8 (11.4%)
Multi-gravida	62 (88.6%)
Previous preterm labor	
Yes	34 (48.6%)
No	36 (51.4%)
Previous second trimester loss	
Yes	27 (38.6%)
No	43 (61.1%)
Tocolytics used	
Yes	69 (98.6%)
No	01 (1.4%)
Antibiotics used	
Yes	51 (72.9%)
No	19 (27.1%)
Duration of stay	
< 21 hours	5 (7.1%)
21 – 30 hours	39 (55.7%)
> 30 hours	26 (37.1%)

Results are presented as mean ± standard deviation and number (percentage).

women from whom an informed consent was obtained prior to the study. Information was gathered by using the pre-coded approved questionnaire means of a structured performa. SPSS software (version 14.0) was used for data entry and analysis of data, including demographic data (Table).

Over one-third of the subjects had previous second trimester miscarriage (n=27). The cerclage was applied between gestational ages of 10-24 weeks with a mean of 15 ± 4.9 weeks. The surgical technique used was McDonald's cervical suture using Mersilene tape under general anaesthesia. Tocolytics and antibiotics were used in 98.6% and 73% of the patients respectively. We calculated the frequencies of different morbidities of cervical cerclage, including pre-term pre-labour rupture of membranes, pre-term delivery, fever, pregnancy loss and vaginal bleeding.

Seven out of the 70 (10%) patients developed premature rupture of membranes (PPROM) after cervical cerclage (Figure). All these patients were managed conservatively and cerclage was not removed in any case. Three patients developed fever and another three patients experienced pregnancy loss after cervical cerclage. Fourteen (15.7%) patients had pre-term labour. They were treated conservatively by giving progesterone suppositories by vaginal/rectal route. Fifteen percent patients developed vaginal bleeding (n=6) during pregnancy. These patients were also managed conservatively with bed rest and vaginal progesterone 400mg daily. Ultrasound scan was repeated in all these cases.

The mean gestational age at the time of cerclage was 15 ± 4.9 weeks. This is similar to that reported by MRC/RCOG working party.^{7,8} However, in some others have reported the gestational age to be around 13 weeks in cases where elective cerclage is inserted, whereas it is around 20 weeks in the ultrasound indicated group.⁹ The foetal loss rate in our study was 8.6% which is much lower than that reported by some of the earlier studies (13.6%).⁹

Only seven out of the 70 patients (10%) developed ruptured membranes in our study. This is higher than that reported by another study from this region. The authors reported this complication to be 3.7% of their population. The rupture of membranes during cerclage insertion results mostly from thin, effaced and dilated cervix when a needle punctures the amniotic sac or when the surgery cause uterine contractions that increases intra-amniotic pressure. The reported frequency of ruptured membranes is much higher in another study.⁴

Another complication of cervical cerclage is chorioamnionitis. Three (4.3%) out of the 70 patients developed fever. These results are encouraging as compared to previous literature,^{4,6} which showed incidence of chorioamnionitis ranging from 5-80%. However, this data

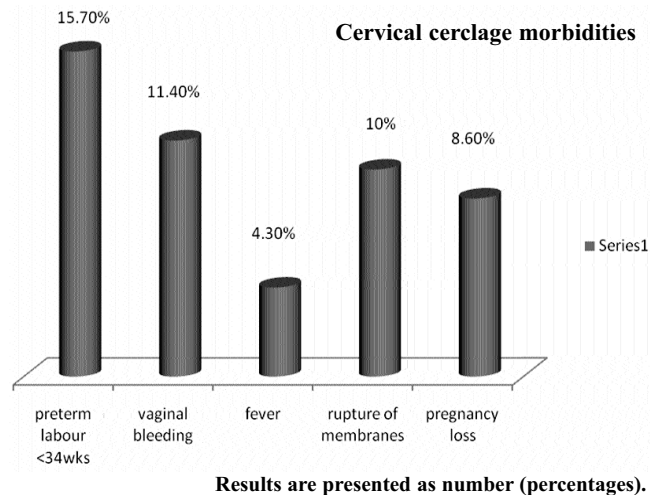


Figure: Frequencies and percentages of Cerclage morbidities.

was obtained from emergency cervical cerclage.

The mean gestational age at delivery in our study was 36 ± 4 weeks. The risk of severe pre-term delivery (before 34 weeks) was seen in 11 (15.7%) cases. Whereas 44 (62.8%) patients in our series delivered at or beyond 37 weeks of gestation. Another 15 (21.5%) women delivered between 34 and 36 weeks of gestation which is similar as reported by Althuisius et al.¹⁰

In our study, tocolytics were prophylactically given in approximately 97% of the patients while bed rest was advised for only 3 days post-surgery.

Conclusion

Our results indicated that the risk of morbidities like foetal loss, ruptured membranes and chorioamnionitis remained small, but the risk of pre-term delivery was high. Sample size was a limitation in the study and larger study is required for subgroup analysis and for external validity.

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