

*Original Article*

## **BENEFITS OF CERVICAL CERCLAGE TO IMPROVE PREGNANCY OUTCOME IN CERVICAL INCOMPETENCE**

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### **ABSTRACT**

**Background:** To determine ability of cervical cerclage to improve pregnancy outcome in patients having cervical incompetence.

**Methods:** A retrospective study was conducted at Central Hospital Limited, Dhanmondi, Dhaka on 35 patients. All had history of one or more mid trimester abortion and were subjected to cervical cerclage (McDonald suture).

**Results:** Average pregnancy prolongation was 17 weeks. Just over half of these women (51%) delivered at term and just over half the newborns (51%) weighed above 2.5 kg. Over 11% had abortion, 14% had preterm PROM and 14% preterm labour. Term PROM was the outcome in 5.7% and cervical injury occurred in 8.6%.

**Conclusion:** Cervical cerclage is beneficial for pregnancy with cervical insufficiency and hence placement of cervical cerclage can reduce early pregnancy loss.

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### **INTRODUCTION**

Cervical incompetence is a risk factor for adverse pregnancy outcome and can cause habitual abortion during 16-28 weeks.<sup>1</sup> Its incidence varies between 0.05% and 2% of the obstetric population, but in women with a history of recurrent mid-trimester losses, it is estimated to occur in 8% of cases.<sup>(2)</sup> To solve cervical insufficiency, surgical cerclage of the cervix has been traditionally used for more than 50 years, since it was first applied by Shirodkar and McDonald. Cervical cerclage involves suturing the cervix with a purse type stitch to keep it closed during pregnancy.<sup>3</sup> Cervical cerclage is an effective method to mechanically prevent the cervix from further

dilation. It is also the cornerstone of the treatment of women with an obstetrical history of premature birth and a shortened cervix on ultrasound and history of cervical insufficiency.<sup>4</sup> Main indications of cervical cerclage are previous second trimester pregnancy loss or delivery that occurred with few or no contractions and cervical trauma or injury leading to cervical incompetence.<sup>3</sup> The effectiveness of cervical cerclage in women with cervical incompetence using McDonald procedure increased the rate of term deliveries to 95.4%. The mean gestational age of delivery was 35 weeks.<sup>5</sup> 7.5% of miscarriages, 18.7% of premature deliveries, 73.7% of term deliveries and 85.1% of foetal survival rate (good Apgar score) were

observed after cervical cerclage in patients having sonographically incompetent cervix.<sup>6</sup>

## METHODS

This is an observational study conducted on 35 patients with cervical insufficiency diagnosed by obstetric history, clinical examination and sonographic cervical assessment. Eligible patients underwent a transvaginal ultrasound scan to confirm cervical length of less than 3 cm or dilatation of internal os  $\geq 0.8$  cm in the current pregnancy.

## RESULTS

### Obstetrical Characteristics of the patients

Among 35 patients, 20 were between 20-29 years and 15 were between 30-39 years. All were booked cases. 43% of cases were 4<sup>th</sup> gravida, 37% 3<sup>rd</sup> gravida and 20% 2<sup>nd</sup> gravida. In 21 (60%) cases cervical cerclage was given at 12-16 weeks of gestation, in 12 (34%) cases between 17-20 weeks in 2 (6%) cases between 21-24 weeks. In 20 (57%) cases cerclage was given electively and in 15 (43%) on emergency basis. The post-operative period was uneventful in 32 (91%) cases and 3 (8.6%) cases had lower abdominal pain.

**Table 1: Obstetrical Characteristics of the study subjects (n=35)**

Attributes	Frequency	Percentage (%)
<b>Age (years)</b>		
20-29	20	57
30-39	15	43
<b>Gravida</b>		
2 <sup>nd</sup>	7	20
3 <sup>rd</sup>	13	37
4 <sup>th</sup>	15	43
<b>Gestational age at cerclage (weeks)</b>		
12-16	21	60
17-20	12	34.3
21-24	2	5.7
<b>Type of cerclage</b>		
Elective	20	57.1
Emergency	15	42.8
<b>Post-operative condition (48 hours)</b>		
Good	32	91.4
Lower abdominal pain	3	8.6

The mean pregnancy prolongation following cerclage was 17 weeks. Three (8.6%) delivered between 28-32 weeks, 10 (29%) between 33-36 weeks and 18 (51%) at term. 24 (69%) delivered by LUCS while 7 (20%)

vaginally. Due to maternal complications abortion was 4 (11%), 5 (14%) had preterm PROM, 5 (14%) had preterm labour, 2(6%) term PROM and 3(9%) cervical injury during vaginal delivery.

**Table 2: Distribution of study subjects by maternal outcome**

Attributes	Frequency	Percentage
<b>Pregnancy prolongation following cerclage (wks)</b>		
Mean $\pm$ SD	17.0 $\pm$ 6.7	
Range (min, max)	1 - 25	
<b>Gestational age of delivery</b>		
28 - 32	3	8.6
33 – 36	10	29
Term	18	51
<b>Mode of delivery</b>		
NVD	7	20
LUCS	24	69
<b>Maternal complications</b>		
Abortion	4	11
Preterm PROM	5	14
Preterm labour	5	14
Term PROM	2	5.7
Cervical injury	3	8.6

**Distribution of study subject by foetal outcome**

In case of foetal outcome 89% survived up to 28 days of age. Eighteen (51%) delivered at term and 13 (37%) preterm (before 37 weeks of gestation). Of these 31 babies who survived 18 (58%) babies were normal birth weight and 13 (42%) were low birth weight.

**Table 3: Distribution of study subject by foetal outcome**

Foetal outcome	Frequency	Percentage
Alive (n=35)	31	89
Term (n=35)	18	51
Low birth weight (n=31)	13	42
Normal birth weight	18	58

**DISCUSSION**

Cervical cerclage is applied to prevent delivery and hence the complications of preterm delivery. In this study we evaluated the efficacy and outcomes of cerclage placement. We found patients can benefit from cerclage placement as the complication rate is low and the prognosis is good even with premature cases. In 20 (60%) cases cervical cerclage was given in between 12-16 weeks' gestation, 12 (5.7%) cases 21-24 weeks. The mean pregnancy prolongation following cerclage was 17 weeks. Eighteen (51%) patients delivered at term, 13 (37%) had preterm deliveries between 28-36 weeks and in 4 cases pregnancy loss occurred. This differs from another descriptive cross-sectional study<sup>7</sup> over a 2-year period on patients with 2 or more recurrent mid-trimester abortions or preterm deliveries. They reported 74% term deliveries after application of cervical cerclage, 19% premature deliveries and 7.5% miscarriages. Another study demonstrated 76% term deliveries, 12% of preterm deliveries and 10% of abortions.<sup>8</sup> In our study 18 (51.4%) had birth weight of  $\geq$  2.5 kg which shows that cervical cerclage improves neonatal survival and decrease perinatal morbidity. This has

also been demonstrated in a study conducted in 2004<sup>9</sup> which demonstrated 71% of cases having birth weight of >2.5 kg. This difference from our study may be due to the fact that our population had a lower socioeconomic status.

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## **CONCLUSION**

Cervical insufficiency is an important cause of early pregnancy loss. Cervical cerclage is an effective method to treat cervical insufficiency and hence to improve pregnancy outcome.

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