

An Observational Study to Assess the Obstetric Outcome After Emergency Cervical Cerclage

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Abstract

Aim: To study Emergency cervical cerclage and pregnancy outcomes

Materials and Methods: This observational study was carried out in the Department of Obstetrics and Gynaecology, Netaji Subhas Medical College and Hospital, Bihta, Patna, Bihar, India. The first author was the operating surgeon for all the cases. All the women who presented between 10 to 25 weeks of gestational age diagnosed with cervical dilatation ranging between 2 to 4 cms were proposed for cervical encerclage after ruling out after ruling out labour, placental abruption and infection.

Results: Three patients had spontaneous abortion after cervical cerclage, two had PROM and one had severe contractions not responding to tocolytics and hence cerclage had to be removed. In around 88 percent of the patients pregnancy was prolonged beyond 28 weeks and around 54 percent. In our study group majority of the cases, pregnancy was prolonged up to 15weeks 1 day to 20 weeks (36%) followed by 10 to 15 weeks (28%). In four patients who presented at early gestation with incompetence pregnancy was prolonged beyond 20 weeks. Out of the 25 patients for whom emergency cervical encerclage was performed 21 fetus were live born after the period of viability. The mean birth weight of the neonate was 2.01 kg with equal number of them weighing more and less than 2 kg. The birth weight ranged between 1.1-3.9 kg.

Conclusion: The precise incidence of cervical incompetence is unknown. Studies have also shown that where there is mere cervical shortening or funneling of the cervix as compared to cervical dilatation, the outcome in terms of prolongation of pregnancy and live births and neonatal survival is better.

Keywords: cervical insufficiency, funneling, cervical cerclage

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Introduction

Cervical insufficiency is a well-documented etiological factor in preterm delivery. Cervical insufficiency is one of the important causes of recurrent abortion

and preterm labor. Preterm labour is the most common cause of neonatal morbidity and mortality. [1] Cervical cerclage is a treatment for women at risk of pregnancy

loss due to cervical insufficiency.[2] Cervical cerclage is a common obstetric procedure, but there still exists controversy regarding its efficacy and patient selection. Few studies showed that cervical cerclage did not prolong gestation or improve neonatal survival,[3] others however concluded that the procedure was beneficial.[4] Emergency cervical cerclage is performed as a salvage measure in case of premature cervical dilatation with exposed fetal membranes in vagina. This may be discovered by ultrasound examination of the cervix or as a result of a speculum/physical examination performed for symptoms such as vaginal discharge, bleeding or 'sensation of pressure.[5] The SOGC Practice guidelines on cervical insufficiency [6] suggests that emergency cerclage should be considered when there is clinical or sonographic identification of a cervix dilated > 1 to 2 cm with no perceived uterine contractions (with or without membranes bulging through the external os). The benefit of cerclage even with cervical dilatation to 4 cm has been shown and should be considered. Prior to placement of emergency cerclage, it is important to rule out any clinical evidence of chorioamnionitis. However, the clinical efficacy of ECC has not been fully evaluated. Also, emergency cerclage performed in the second trimester of pregnancy for cervical insufficiency, such as cervical shortening or dilation, is associated with many complications.[7]

Material and methods:

This observational prospective study was carried out in the Department of obstetrics and gynaecology, Netaji Subhas Medical College and Hospital, Bihta, Patna, Bihar, India for 8 months

Inclusion and exclusion criteria

All the women who presented between 10 to 25 weeks of gestational age diagnosed with cervical dilatation ranging between 2 to 4 cms were proposed for cervical cerclage after ruling out labour, placental abruption and infection.

Methodology:

All the women had the standard preoperative treatment for emergency cervical cerclage according to hospital protocol which included bed rest in trendelenberg position, a broad spectrum antibiotic and parental tocolytics are started for at least 8 hours.

During the operation, general anaesthesia was used, with the patient in head low, lithotomy position. The steep trendelenburg position assisted in spontaneous reduction of the amniotic membranes into the uterine cavity. Furthermore, a Foley's catheter with tip cut up to the balloon is gently inserted into the canal and inflated until the membranes ascend into the uterine cavity. Emergency cervical cerclage was then inserted using the McDonald technique with loop polypropylene suture No.1 hitched to atraumatic round body needle.

Postoperatively parenteral tocolytics and antibiotics were continued for 24 hrs, the patients were discharged home after 48 hours and continued on antibiotics and oral tocolytics for one week. Following discharge complete bed rest and avoidance of coitus is advised. All the cerclage sutures were removed electively at the gestation of 37 to 38 weeks of pregnancy or following rupture of fetal membranes, haemorrhage or whenever labour ensued.

Results:

Table 1: Demographic characteristics

	Number	%
Age (years) Mean	22.6	
Gravidity		

Primigravida	10	40
Multigravida	15	60
Gestational age (weeks) Mean	20.2	
Dilatation of cervix (cms) Mean	4.1	

25 patients were analysed during the study. The mean age at the time of presentation was 22.6 years with a range of 20 to 30 years. 58 percent of the patients were multigravida and 40 percent were primigravid. The gestational age at which

the patients presented with cervical incompetence ranged from 10-25 weeks with a mean of 20.2 weeks. The cervical dilatation at the time of emergency cerclage ranged from 2- 4 cms with a mean of 4.1 cms.

Table 2: Gestational age at the time of delivery

Gestational age (weeks)	N	%
< 28	4	16
28 - 32	7	28
33 - 36	6	24
>36	8	28

Three patients had spontaneous abortion after cervical cerclage, two had PROM and one had severe contractions not responding to tocolytics and hence cerclage had to be

removed. In around 88 percent of the patients pregnancy was prolonged beyond 28 weeks and around 54 percent.

Table 3: Number of week's pregnancy prolonged after cerclage

Weeks	N	%
< 5	2	8
5w 1d - 10	3	12
10w 1d - 15	7	28
15w 1 d -20	9	36
>20	4	16

In our study group majority of the cases, pregnancy was prolonged up to 15weeks 1 day to 20 weeks (36%) followed by 10 to 15 weeks (28%). In four patients who

presented at early gestation with incompetence pregnancy was prolonged beyond 20 weeks.

Table 4: Birth weight at delivery after cerclage

Birth weight (kg)	N	%
<2	13	52
2 - 2.5	3	12
2.51 - 3	6	24
>3	3	12

Out of the 25 patients for whom emergency cervical encerclage was performed 21 fetus were live born after the

period of viability. The mean birth weight of the neonate was 2.01 kg with equal number of them weighing more and less

than 2 kg. The birth weight ranged between 1.1-3.9 kg.

Table 5: Perinatal outcome after cerclage

Outcome	N	%
Abortion	3	12
NICU admission	9	36
No intervention	13	52

After emergency cerclage 52 percent of the neonates required only regular perinatal care and had minimal morbidity. Nine babies were admitted to NICU and interventions ranged from ventilation, surfactant administration to just incubator

support with nasal oxygen. The stay in nicu ranged between 3 days to 48 days average being 11.1 days. All the 21 babies were discharged home without any significant sequelae.

Table 6: Morbidity associated with emergency cerclage

Morbidity	N	%
Abortion	3	12
PROM	6	24
Preterm labor	10	40
No complication	12	48

Ten patients had preterm labor of which six of them had uterine anomalies - three with septate uterus, two had bicornuate uterus and one case of unicornuate uterus. Hence in the presence of uterine anomalies in spite of emergency cerclage pregnancy might not be prolonged to term. Also in the study group 24 percent of the patients had uterine anomalies implying it might be a significant cause for cervical incompetence.

Discussion:

Cervical cerclage, despite being a relatively common operative procedure and most common method to treat cervical insufficiency, evidence is still less about its efficacy. In cases with advanced cervical dilatation and bulging membranes, it has been referred to as rescue cerclage due to its poor success rate. Cervical cerclage in advanced cervical dilatation with bulging membranes in the second trimester is controversial. The outcome of these pregnancies is usually poor, but

without a cerclage the loss of pregnancy is inevitable. [8]

In our study group, 25 patients underwent emergency cervical cerclage due to cervical dilatation. The mean age of the study group was 22.6 years with a range between 20 to 30 years. There were 10 primigravidas and 15 multigravidas. The demographic characteristics match with the study done by Balasubramanian D et al in 2015, which reported that out of the 7 cases studied majority were primigravidas (57.4%) and their average age was 23.3 years (range 20 to 26 years), while their gestational age at the time of encerclage ranged between 22 and 26 weeks (with a mean of 24.1 weeks).[9]

In a study, done with the same objectives by Thaher AJ et al in Riyadh, KSA 14 pregnant women underwent emergency cervical cerclage.[10] The average GA at the time of cerclage placement was 23 weeks plus 2 days and the average latency to delivery was 7 weeks and 4 days. In our study the gestational age at the time of

presentation ranged from 15 to 26 weeks with a mean gestational age of 19.3 weeks. The latency to delivery was almost double at 13.4 weeks probably due to earlier gestational age at which the cerclage was performed.

In another study done by Zhu L Q et al, emergency cerclage led to live-births, with a success rate of 82.28%.[11] which is comparable to our study. The mean gestation at delivery was 30.3±4.7 weeks (range: 25-39.6 weeks) and a mean birth weight of 1934.69±570.37 g (range: 880-3350 g). In our study mean gestational age at delivery was 32.7 weeks (19-40 weeks) and mean birth weight was 2.01kg (0.45-3.8kg). Both the parameters are comparable and similar and imply that a properly performed emergency cerclage is beneficial in prolonging the gestational age and resulting in live births in more than 80% of cases. In a study done by A. Ojabo et al in Nigeria, cases were studied and 3 patients underwent spontaneous abortions.[12] This study compared outcome between cervical dilatation that is less than 5 cm and cervical dilatation that is more than 5 cm, the authors found that cervical cerclage is a better choice if the cervical dilatation at the time of cervical cerclage is less than 5 cm and that it is of limited use if the dilation is greater than 5 cm. The same study observed that both live birth rate and prolongation of pregnancy is lower if the cervical dilatation is more. However in our study mean dilatation of cervix was 2.97 cms with a range of 2-4 cm. All the three patients who had abortion had a cervical dilatation of 3.5 cm.

Similar to the findings of our study is a study done by Purnima D. et al, Out of the 20 patients in the study group, 12 proceeded to term gestation, 5 went for preterm delivery and 3 resulted in spontaneous miscarriages.[13]

In a study published by L.pereira et al 225 women were included in the trial, after

clinical examination showed cervical incompetence.[14] 152 underwent cerclage and 73 were managed expectantly without cerclage. Compared with expectant management, cerclage group was associated with longer latency of gestational age at delivery, improved neonatal survival, birth weight greater than 1.5 kg. Hence rescue cerclage has a definite role when cervical dilatation and bulging membranes complicate the pregnancy.[15]

Other significant observation in our study is 60 percent of post cerclage patients delivering preterm had uterine anomaly. Not much has been reported in the literature about the success of emergency cervical cerclage in presence of uterine anomalies. It might be useful to rule out uterine anomalies in cervical incompetence as it might guide us in counselling about the prognosis even after cervical cerclage.

Use of antibiotics, tocolytics and progesterone has definite role in success of emergency cerclage. Though the surgical technique hasn't changed much over the period of time, improved neonatal outcome can be definitely attributed to better neonatal ICU care and interventions available. In our study the least gestational age at which neonate was salvaged was 28 weeks and birth weight was 870 gms.

Conclusion:

The precise incidence of cervical incompetence is unknown. Studies have also shown that where there is mere cervical shortening or funnelling of the cervix as compared to cervical dilatation, the outcome in terms of prolongation of pregnancy and live births and neonatal survival is better.

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