

PREGNANCY OUTCOME IN CERVICAL ENCKERCLAGE PATIENTS- A RETROSPECTIVE STUDY IN A TERTIARY CARE CENTER, MANDYA

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Abstract

Objectives: To describe the effectiveness of cervical cerclage in prolonging pregnancy. To describe the obstetric and perinatal outcome following cervical cerclage. **Materials and Methods:** A record based study was conducted over a period of 3 years (January 2020 to december 2022) in patients who had undergone cervical cerclage during pregnancy at MIMS. **Results:** In this study, 39 patients underwent cervical cerclage. The mean age of the study group was 21.5 years with a range between 20-35 years. There were 22 primi gravidas and 17 were multi gravidas. In around 7.6 percent of the patients pregnancy was prolonged upto 28 weeks and around 76.9 percent crossed 32 weeks. Nine of these patients had preterm delivery. Out of the 39 patients for whom cervical enckerclage was performed 31 fetus were live born afterthe period of viability. The mean birth weight of the neonate was 2.6 kg. The birth weight ranged between 2.5-3kg. After cerclage 41 percent of the neonates required only regular perinatal care and had minimal morbidity. 15 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 11.2 days. All the 31 babies were discharged home without any significant sequalae. **Conclusion:** Prophylactic and ultrasound indicated cervical cerclage appear to have low complication rates and high live birth rates. Emergency cerclage has a high complication rate and is therefore associated with poor outcome. In post cervical enckerclage the outcome in terms of prolongation of the pregnancy, livebirths, and neonatal survival is better.

INTRODUCTION

Cervical incompetence is defined as the inability to support a pregnancy to term due to a functional or structural defect of the cervix.¹ Although the real incidence of cervical insufficiency isn't known exactly due to the complexity in the definition, it is estimated to be between 1/200 to 1/2000 per birth.^[1] It is a clinical diagnosis characterized by acute, painless dilatation of the cervix usually in the mid trimester resulting preterm and often previable delivery. Cervical cerclage has become the mainstay for the management of cervical incompetence.^[2] Preterm birth is the leading cause of perinatal morbidity with survival rates estimated to be 54% at 25 weeks of gestation, 38% at 24 weeks of gestation and 23% at 23 weeks of gestation.^[3] Over the years

shortened cervix has become synonymous with incompetent cervix or cervical insufficiency and is an integral part of preterm birth.^[4] Cervical insufficiency may be present in up to one percent of the obstetric populations.^[5]

Cerclage operations performed in cervical insufficiency cases can be classified into three groups; emergency cerclage, prophylactic cerclage and ultrasound indicated cerclage. Emergency cerclage can be performed when there is dilatation of cervix on digital examination of the pregnant woman before 28weeks of gestation. Prophylactic cerclage should be performed between 14th and 16th weeks of gestation. Cerclage for sonographic indication is performed in cases with 2nd trimester

loss or preterm birth according to the cervical changes in the pregnancy.^[6]

Though exact etiology of cervical incompetence is not well understood, the following factors are considered to be contributing to the condition.^[7,8] Previous cervical trauma such as dilatation and curettage, conization, cauterisation, or amputation Abnormal cervical development (including following in- utero exposure to diethyl stilbestrol) and connective tissue abnormalities (Ehlers- Danlos syndrome). Associated uterine anomalies like unicornuate, bi cornuate or septate uterus.^[9] In this study we aim to investigate the patients on whom cerclage was performed and contribution of this procedure in further continuation of the pregnancy.

Objective

To describe the effectiveness of cervical cerclage in prolonging pregnancy. To describe the obstetric and perinatal outcome following cervical cerclage.

MATERIALS AND METHODS

Study Design: Retrospective Observational study

Study Period: The study will be conducted from the records of January 2020 to December 2022 (3 years) will be analysed.

Sample Size: All women who have undergone cervical cerclage during pregnancy at MIMS during study period (35 cases).

Sampling Method: Data will be collected from all available records.

Inclusion Criteria

All records of women who have undergone cervical cerclage at MIMS during the study period.

Exclusion Criteria: nil

Method of Data Collection (study tools)

A record based study will be conducted over a period of 3 years (January 2020 to december 2022) for patients who have undergone cervical cerclage during pregnancy at MIMS. The data will be collected from Medical record section, OT register and Parturition register and will be analysed.

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.

Data Analysis: The statistical analysis is done by using statistical software (SPSS). The data is represented as median or frequencies.

RESULTS

Altogether 39 patients were analysed during the study. The majority age at the time of presentation

was 20-25 years. 56.4 percent of the patients were primigravida and 43.5 percent were primigravida. The gestational age at which the patients presented with cervical incompetence ranged from 15-26 weeks with a mean of 19.3 weeks.

8 patients had spontaneous abortion after cervical cerclage, 8 had PROM and one had severe contractions not responding to tocolytics and hence cerclage had to be removed. [Table 1]

Most of these patients, 48 percent belong to class 4 socioeconomic status and 33 percent belongs to class 3 socio economic status. [Table 2]

In around 7.6 percent of the patients pregnancy was prolonged beyond 28 weeks and around 76.9 percent crossed 32 weeks. Nine of these patients had preterm delivery. [Table 3]

In our study group majority of the cases, pregnancy was prolonged more than 20 weeks (28.2%) followed by 11 to 15 weeks (23%). In three patients who presented at late gestation with incompetence pregnancy was prolonged for 5 to 10 weeks. [Table 4]

Out of the 39 patients for whom cervical encerclage was performed 31 fetus were live born after the period of viability. The mean birth weight of the neonate was 2.6 kg. The birth weight ranged between 2.5-3kg. [Table 5]

Nine patients had preterm labor of which three of them had uterine anomalies - one with septate uterus, two had bicornuate uterus. Hence in the presence of uterine anomalies in spite of cerclage pregnancy might not be prolonged to term. Also in the study group 35.8 percent of the patients had Dilatation and curettage history implying it might be a significant cause for cervical incompetence. [Table 6]

After cerclage 41 percent of the neonates required only regular perinatal care and had minimal morbidity. 15 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 11.2 days. All the 31 babies were discharged home without any significant sequelae. [Table 7]

Regarding the Outcome of 39 cases . nine of them underwent LSCS , 22 of them had vaginal delivery ; out of which 7 were preterm deliveries and 5 had instrumental delivery. [Table 8]

Nine patients had preterm labor. Eight of them had spontaneous abortion and 8 had PROM. Whereas 35.8% had no complications. [Table 9]

In our study 13 patients presented at gestational age 10-15wks,15 patients presented at 15-20wks,7 patients presented at 20-25wks. [Table 10]

Table 1: Demographic Characteristics

AGE (yrs)	n	%	GRAVIDA	n	%
20-25	21	53.8	PRIMI	22	56.4
26-30	12	30.7	MULTI	17	43.5
31-35	6	15.3			

Table 2: Risk Factors Associated with Cerclage.

Risk factor	N	%
Previous history of Dilatation and curettage	14	51.8
Infections	1	3.7
TWINS	3	11.1
Uterine anomalies	3	11.1

Table 3: Gestational Age at The Time of Delivery.

Weeks of gest	N	%
10-15	13	33.3
15-20	15	38.4
20-25	7	17.9

Table 4: Types Of Cerclage And Its Outcome

Types of Cerclage	No of cases	Successful Outcome
Emergency	7	3
Prophylactic	26	23
Ultrasound	6	5

Table 5: Morbidity Associated with Emergency Cerclage

Morbidity	N	%
Abortion	8	20.5
PROM	8	20.5
Preterm	9	23.0
No complications	14	35.8

Table 6: Number Of Weeks Pregnancy Prolonged After Cerclage.

Weeks of pregnancy prolonged	N	%
<5 wks	8	20.5
5-10 wks	3	7.6
11-15 wks	9	23.7
16 – 20 wks	8	20.5
>20 wks	11	28.2

Table 7: Gestational Age At The Time Of Delivery.

Gest age at delivery	N	%
<28	1	2.5
28-32	3	7.6
33-37	6	15.3

Table 8: Mode Of Delivery Associated With Cerclage.

Mode of delivery	N	%
FTND	4	12.9
FTVD	6	19.3
PTVD	7	22.5
LSCS	9	7.6
		1.5
VACCUM	5	1.2

Table 9: Birth Weight at Delivery After Cerclage.

Birth weight	N	%
<2kg	4	12.9
2-2.5kg	8	25.8
2.5-3 kg	15	48.8
>3kg	4	12.9

Table 10: Perinatal Outcome After Cerclage.

Perinatal outcome	N	%
NICU admissions	15	38.4
Abortions	8	20.5
Regular care	16	41.0

DISCUSSION

Cervical incompetence is characterized by premature, painless cervical dilatation during gestation in the absence of uterine contractions, followed by expulsion of the preterm foetus. Cervical cerclage is an intervention that is widely used to prevent miscarriage or delivery in the second trimester. Emergency cerclage in the presence of cervical dilatation remains controversial due to its low success rates. Even though the outcomes of these pregnancies are usually poor, but without a cerclage the loss of pregnancy is inevitable.

In our study group, 39 patients underwent cervical cerclage. The mean age of the study group was 21.5 years with a range between 20- 25years. There were 22 primigravidas and 17 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 24.1week.

- Prasad N N et al(2017) conducted a retrospective study at Rajarajeshwari medical college, Bengaluru involving 24 patients among which 3 patients had spontaneous abortion, 2 had PROM and 8 of these had term delivery. 21 fetus were live born after the period of viability.^[9] of these babies were admitted to Neonatal Intensive Care Unit (NICU) of these 50% only required regular perinatal care. This study concluded that precise incidence of cervical incompetence is unknown and studies also shown that where there is mere cervical shortening or funnelling compared to dilatation, the outcome of live birth and neonatal survival is better.^[2]
- Shalini et al (2021) conducted a prospective observational study at C.S.I. kalyani general hospital, Chennai, Tamil Nadu over a duration of 18 months involving 15 patients for whom emergency cerclage was performed. 3 had spontaneous abortion, 6 had PROM and 5 had term delivery. Time interval between emergency cerclage and delivery was 11weeks. 11 fetus were live born after period of viability, 3 had NICU admission. The study concluded that prolongation of pregnancy and neonatal outcome were better even when bulging of membranes existed hence emergency cerclage was recommended for cervical dilatation and bulging membranes.^[10] Turkeyilmaz G et al (2020) conducted a retrospective observational study at Van education and research hospital, Van, Turkey involving 20 women between 18-25 weeks of gestation mean gestational week of pregnancy was 21 ± 1 at the time of operation and mean cervical dilatation was 2.5 ± 1 mm. mean prolongation of pregnancy was 47.3 ± 37.1 days and mean gestational age at delivery was 27.8 ± 5.3 weeks. Mean birth weight

was 1184 ± 866 gm. Perioperative complications occurred in 5% and 75% of the neonates were admitted to NICU and neonatal survival was 65%. This study concluded that emergency cerclage may prolong pregnancy patients who had cervical dilatation in clinical examination. It has low perioperative complication rate.^[11-17]

CONCLUSION

Over the past decade, several authors have published studies that show a reasonable level of success following emergency cerclage for painless cervical dilatations of up to four cm. There are several reported cases of success with cervical cerclage in preventing mid-trimester pregnancy losses and preterm labour.

We recommend that salvage cervical cerclage should be considered in patients with advanced cervical dilatation and bulging membranes in the second trimester and for history based pregnancy losses. With good neonatal ICU back up most of the pregnancies can be salvaged with minimal morbidity to the neonates.

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