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Original research article

MODE AND SUCCESS RATE OF DELIVERY OF LIVE BIRTHS FOLLOWING EMERGENCY CERVICAL CERCLAGE

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Abstract: *Cervical incompetence is a significant cause of second-trimester pregnancy loss and preterm birth. Emergency cervical cerclage (ECC) is a surgical intervention aimed at preventing these adverse outcomes by providing mechanical support to a weakened cervix.* ***Objective:*** *To evaluate the outcomes of emergency cervical cerclage in terms of mode of delivery and the success rate of live birth in patients presenting to a tertiary care hospital.* ***Methods****: This descriptive case series was conducted in the Department of Gynecology at Lady Reading Hospital, Peshawar, from May 2023 to November 2023. Ninety-six patients with cervical incompetence underwent ECC under aseptic conditions by a single surgical team using standard procedures. Data on the mode of delivery and fetal outcomes were collected. Patients were followed up bi-weekly for the first month, then monthly until delivery. Statistical analysis included descriptive statistics to summarize the outcomes.* ***Results****: Out of 96 patients, 61 (63.5%) had vaginal deliveries, while 35 (36.5%) had cesarean sections. The majority of pregnancies (67.7%) resulted in live births, whereas 32.3% of the cases resulted in fetal death.* ***Conclusion:*** *Emergency cervical cerclage is an effective intervention for women with cervical incompetence, capable of prolonging pregnancy and improving neonatal outcomes.*

Keywords: Cervical Cerclage, Cervical Insufficiency, Delivery, Obstetric, Fetal Death, Pregnancy, Pregnancy Outcome, Uterine Cervical Incompetence

Introduction

Cervical incompetence is a disorder in which the cervix is either physically or functionally weak, leading to painless cervical effacement and dilatation that results in the loss of the fetus before viability during the second trimester.(1, 2). Preterm birth is one of the leading causes of perinatal mortality and morbidity.(3). According to statistics, premature births and second-trimester losses are 8% the result of cervical incompetence(4). Cervical incompetency situations can be classified as history related, emergency, prophylactic, or ultrasound-indicated to classify cerclage surgeries. (5, 6). Regretfully, prophylactic cerclage isn't always required because cervical dilatation can happen before the procedure, and some women may not have a clear medical history(7). Obstetricians may notice an unexpectedly dilated cervix in the middle of the third trimester and a bulging and extended amnion sac. There is not enough time to consider your options. It is possible to stop the fetal loss in this case by doing the cerclage procedure as soon as possible.

Emergency cervical cerclage may be done if digital examination before the 28th week of pregnancy without active labor shows effacement and dilatation(8). Emergency cervical cerclage can help patients with cervical incompetence prolong their pregnancies and improve the health of their unborn children. According to a study, an 82.28% success rate for live births was linked to the use of emergency cerclage. Their analysis showed that longer pregnancies and improved neonatal outcomes were seen by women with cervical incompetence who received emergency cervical cerclage.(9).

According to a study(8), singleton pregnancies had higher gestational ages at birth and longer gestations than multiple pregnancies, but the rate of fetal survival was identical. Fifty women with singleton pregnancies were studied; no surgical complications were reported. The success rate for vaginal births was 96%. Ten patients had pregnancies longer than thirty-six weeks. Neonatal weighed 2510.7g on average when they were born. A mean of twenty-one days were spent by the twenty infants that were admitted to the NICU(8). The purpose of this study is to evaluate the association between the fetal outcome and the delivery technique in mothers with cervical insufficiency. There is a lack of literature on the topic among our population. The findings of this study offer more proof of the advantages of attempting emergency cerclage, which may help in counseling and decision-making.

Methodology

Following the hospital's clearance, a descriptive case series was carried out at the gynecology department of Lady Reading Hospital in Peshawar. Using a non-probability, sequential technique, 96 individuals between the ages of 18 and 40 who were experiencing their first pregnancy and had a history of preterm delivery, cervical incompetence, or cervical history were chosen. Individuals who had undergone multiple cesarean sections before their presentation were removed. Every patient's basic demographic information was recorded on a pre-designed proforma. A single team used the conventional approach to perform emergency cervical cerclage on the patients while maintaining aseptic conditions. The patients were monitored every two weeks for the first month and then every month until the delivery. Patients had monthly routine pregnancy check-ups. Patients with documented premature

labor, ruptured membranes, bleeding, or overt indications of infection were not allowed to participate in the trial. The mode of delivery and the fetal outcome were assessed. SPSS 25 was used to analyze the data. The link was examined using the Chi-Square test, with the P significant value set at 0.05.

Results

Table 1 presents the mean age, gestational age, neonatal birth weight, gravidity, and parity. The distribution of the mode of delivery in the study cohort indicates that out of the total sample of 96 participants, sixty-one (63.5%) experienced vaginal delivery. In contrast, 36 (36.5%) patients had a cesarean section (Table 2).

Most pregnancies resulted in live births, with 67.7% of participants experiencing this positive outcome. Regrettably, there were instances of fetal mortality, with 32.3% of participants reporting a negative result (Table 3). Tables 4 show the association of mode of delivery and fetal outcome with age. Fetal outcome showed a notable association with age (P = 0.02).

Table 1 Demographics characteristics of the study population

Numerical Variables	Mean	Std. Deviation
Age (Years)	26.79	5.546
Gestational age at the time of presentation (Weeks)	32.23	3.655
Neonatal Birth Weight (Grams)	2738.97	152.676
Gravidity (n)	2.21	1.114
Parity (n)	1.94	.938

Table 2 Mode of delivery

Mode of Delivery	Frequency	Percent
Vaginal	61	63.5
Cesarean section	35	36.5
Total	96	100.0

Table 3 Fetal outcome

Fetal Outcome	Frequency	Percent
Alive	65	67.7
Dead	31	32.3
Total	96	100.0%

Table 4 Association of mode of delivery and fetal outcome with age

		Age distribution (Years)				P value
		18 to 30		31 to 40		
		N	%	N	%	
Mode of delivery	Vaginal	39	63.9%	22	36.1%	0.86
	Cesarean section	23	65.7%	12	34.3%	
Fetal outcome	Alive	37	56.9%	28	43.1%	0.02
	Dead	25	80.6%	6	19.4%	

Discussion

This study was conducted to evaluate the outcome following emergency cervical cerclage (ECC) in terms of mode of delivery and success rate of live births in patients presenting to a tertiary care hospital. A total of 96 patients were studied. This study observed that emergency cervical cerclage (ECC) is efficacious in improving fetal outcomes in women with cervical incompetence. A retrospective study of 158 cases showed that ECC is effective in prolonging pregnancy and improving neonatal outcomes in women with cervical incompetence. No severe maternal complications such as hemorrhage or maternal death occurred following emergency cerclage. (9) A study showed that emergency cerclage was superior to expectant treatment for the primary outcome of pregnancy prolongation, neonatal birth weight, neonatal Apgar 1′, number of live births, deliveries following 32 weeks, and deliveries following 34 weeks. In terms of maternal complications, the study mentioned in the initial query reported that 29.2% of participants experienced chorioamnionitis, 6.3% had premature rupture of membranes (PROM), 44.8% had postpartum hemorrhage (PPH), and 19.8% had preterm labor(10).

Regarding mode of delivery in our study, out of the total sample of 96 participants, sixty one (63.5%) had a vaginal delivery, while thirty-five (36.5%) had a C-section; our results are similar to a study that was carried out for assessing the impact of ECC on the mode of delivery exhibited that 60% of their patients had vaginal deliveries. In contrast, around 40% had a cesarean section.(11)

When we assessed fetal outcome in terms of live births, we observed that out of 96 deliveries, there were 65 (67.7%) live births in our study, while 31 (32.3%) deliveries ended in stillbirth. These numbers are similar to a study that reported that the number of live births was 70%.(12)

At placebo rates, cervical cerclage lowers the incidence of premature births. Nonetheless, the findings are debatable when considering neonatal morbidity. Surprisingly, the

cerclage group has a lower incidence of cerebral pathology, necrotizing enterocolitis, and retinopathy of prematurity than the general population, which has respiratory issues. Nowadays, neonates born over 28 weeks are approximately 90% protected from complications and death because of the development of neonatal intensive care units and the availability of steroid therapy before premature births. Many morbidities, including necrotizing enterocolitis, intraventricular hemorrhage, and bronchopulmonary dysplasia, are reduced by steroid treatment.(12)

Conclusion

In conclusion, ECC is an effective option for patients with cervical incompetence and can prolong pregnancy and improve neonatal outcomes.

Declarations

Data Availability statement
All data generated or analyzed during the study are included in the manuscript.
Ethics approval and consent to participate.
Approved by the department concerned. (IRB/LRHL-554 dated 2-1-2023)
Consent for publication
Approved
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Not applicable

Conflict of interest

The authors declared an absence of conflict of interest.

Authors Contribution

SHAHIDA SULTAN (Assistant Professor)
Concept & Design of Study,
SYEDA SITWAT FATIMA (Assistant professor)
Revisiting Critically & Final Approval of version
KHUBROO (Post Graduate Trainee)
Data Analysis & Drafting

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