

Cervical Cerclage as a Preventive Strategy for Premature Birth in Patients with Cervical Insufficiency A Retrospective Study Conducted at the Obstetrics-Gynecology University Hospital "Mbretëresha Geraldinë"

Arlind Janaqi*, Mirela Rista

Obstetrics- Gynecology Department, Faculty of Medicine, University of Medicine, Tirana, Albania

Abstract

Background: Cervical insufficiency affects 1% of all pregnancies. It is also known as incompetent cervix. Cervical insufficiency can cause problems including recurrent miscarriage in the second trimester and premature birth. This study intends to compare the rate of premature births (under 37 weeks) between conservative treatment (bed rest) and cerclage treatment, in hospitalized patients with cervical insufficiency.

Purpose: The purpose of this study is to compare the rate of premature births between conservative treatment and Cerclage treatment, in hospitalized patients with cervical insufficiency.

Methodology: This is a retrospective study conducted at the Obstetrics-Gynecology University Hospital "Mbretëresha Geraldinë"

during a period of 2 years. This study was conducted from January 2019 to January 2021.

The patients were divided into two groups (cerclage treated patients, and conservatively treated patients). Each group were divided into two categories (premature birth, and at term birth) A comparison was made between two categories of each respective group.

Results: Thirty-five patients were included in this study. It was noticed that 3 patients gave birth prematurely, and 16 patients gave birth at term on the group of 19 patients who were treated with Cerclage. Whereas, 9 patients gave birth prematurely, and 7 patients gave birth at term on the group of 16 patients who were treated conservatively with bed rest and Progesterone

therapy.

Conclusion: Premature birth (<37 weeks) is significantly more frequent in the conservatively treated group compared to the Cerclage-treated group.

Keywords: Cervical insufficiency (Cervical incompetence); cerclage; ultrasound-indicated cerclage; rescue cerclage; bed rest; progesterone therapy.

INTRODUCTION

The incidence of cervical insufficiency

Cervical insufficiency affects 1% of all pregnancies. It is present in 8% of women with recurrent miscarriage in the second trimester (1,2,3).

In a 2011 meta-analysis, it was reported that in women with previous spontaneous preterm births and cervical length <25mm, cerclage significantly reduced premature birth (Relative Risk = 0.70; Confidence interval = 95%) (4,5,6).

Definitions

-Cervical insufficiency (Cervical incompetence):

Weakening of the structure of the cervix, which causes painless dilation and shortening of the cervix in the absence of uterine contractions, leading spontaneous pregnancy loss (7,8,9).

-Cervical shortening: A cervical length of <25 mm as measured by trans-vaginal ultrasound performed before the 24th week of pregnancy (9,10).

-Cervical cerclage: A surgical procedure that consists of stitching the cervix to preserve its integrity and prolong gestation.

-Ultrasound-indicated cerclage: A type of Cervical cerclage performed between the 14-24 weeks of pregnancy in women with progressive shortening of cervical length on consecutive transvaginal ultrasounds and a closed external cervical ostium (6).

-Rescue cerclage: A type of cervical cerclage performed in women with a dilated cervix (> 2 cm) in the absence of uterine contractions;

cervical funneling > 50%; heavy mucoid vaginal discharge; or bulging membranes through the cervical os (7).

The purpose of this study is to compare the rate of premature births (before 37 weeks) between conservative treatment (bed rest and progesterone) and cerclage treatment in hospitalized patients with cervical insufficiency.

METHODS

This study included all patients diagnosed with cervical insufficiency, hospitalized at the Obstetrics-Gynecology University Hospital "Mbretëresha Geraldinë" over a two-year period (January 2019-January 2021).

Patients were divided into two groups:

- 1- The first group consisted of patients treated with Cerclage.
- 2- The second group consisted of patients treated conservatively (bed rest and progesterone, 200 mg ovules daily, until 30 weeks of gestation) (11,12).

Each group was further subdivided into two categories: those who delivered preterm and those who delivered at term. A comparison was then made between the outcomes of these categories within each group.

Data analysis was performed using a 2x2 Chi-squared test with Yates' correction (13).

RESULTS

This is a retrospective study including 35 women diagnosed with cervical insufficiency, hospitalized in the Obstetrics-Gynecology

University Hospital "Mbretëresha Geraldinë" over a two-year period (January 2019-January 2021).

Data were collected from the clinical records of these patients. All data are summarized in Figures 1, 2 and table 1.

The patients were divided into two groups:

1- The first group included 19 patients who were treated with Cerclage, of whom 3 delivered

preterm and 16 delivered at or after 37 weeks. Within this group, 5 patients underwent rescue cerclage and 14 underwent ultrasound-indicated cerclage.

2- The second group included 16 patients treated conservatively with bed rest and progesterone therapy. In this group, 9 delivered preterm and 7 delivered at term.

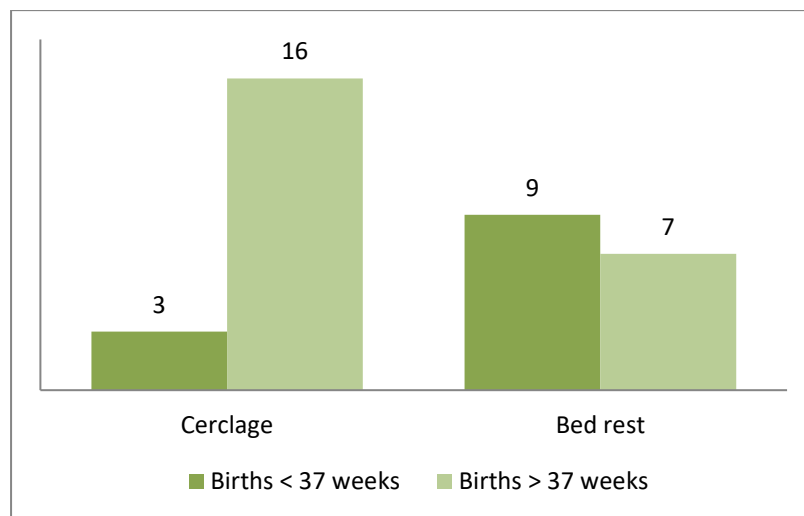


Figure 1. Comparison between cerclage treatment and conservative treatment

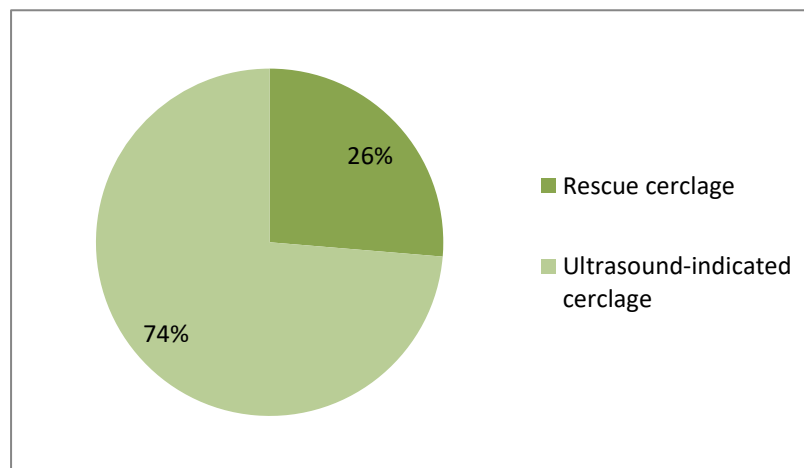


Figure 2. Percentage rate between Rescue cerclage and Ultrasound-indicated cerclage

Table 1. Distribution of data between cerclage and conservative treatment groups according to week of delivery

	Births < 37 weeks	Births > 37 weeks	Marginal Row Totals
Cerclage treatment	3 (RR=6.51)	16 (RR=12.49)	19
Conservative treatment	9 (RR=5.49)	7 (RR=10.51)	16
Marginal Column Totals	12	23	35 (Grand Total)

Data analysis was conducted using a 2x2 Chi-squared test with Yates' correction. A significance level of 0.05 was set.

The analysis yielded a chi-square statistic of 6.311 with a p-value of 0.011999. Using Yates' correction, the chi-square statistic was 4.6429, with a p-value of 0.031182.

These results indicate that for p-values < 0.05, there is a statistically significant difference between the cerclage-treated group and the conservatively treated group.

CONCLUSION

Premature birth (<37 weeks) is significantly more frequent in the conservatively treated group compared to the Cerclage-treated group.

Acknowledgements: None declared.

Conflict of Interest Statement: The author declares that have no conflict of interest.

REFERENCES

1. Norwitz ER, Lockwood CJ, Barss VA. Transvaginal cervical cerclage. Up to Date 2007.
2. 3centres Collaboration. Cervical shortening. Cervical insufficiency. Clinical Practice Guidelines 2011. Available from URL: <http://3centres.com.au/guidelines/cervicalshortening-and-cervical-insufficiency/>.
3. Bergella V, Rafael TJ, Szychowski et al. Cerclage for short cervix on ultrasonography in women with singleton gestations and previous preterm birth: A meta-analysis. *Obstet Gynecol* 2011; 117(3): 663-671.
4. Althuisius SM, Dekker GA, Hummel P, Bekedam DJ, Van Geijn HP. Final results of the cervical incompetence prevention randomized cerclage trial (CIPRACT): Therapeutic cerclage with bed rest versus bed rest alone. *Am J Obstet Gynecol* 2001; 185: 1106-12 (Level I).
5. Harger J. Cerclage and cervical insufficiency: An evidence based analysis. *Obstet Gynecol* 2002; 10(6):1313-27.
6. Jorgensen AL, Alfirevic Z, Tudur Smith C, Williamson P; on behalf of the cerclage IPD Meta-analysis Group. Cervical stitch (cerclage) for preventing pregnancy loss: individual patient data meta-analysis. *BJOG* 2007; 114:1460–1476 (Level I).
7. Drakeley AJ, Roberts D, Alfirevic Z. Cervical stitch (cerclage) for preventing pregnancy loss in women. *Cochrane Database of Systematic Reviews* 2003,1. DOI: 10.1002/14651858.CD003253. (Level I).
8. Kyrgiou M, Arbyn M, Martin-Hirsch P et al. Increased risk of preterm birth after treatment for CIN. *British Medical Journal* 2012. 345: e5847.
9. American College of Obstetrics and Gynecology (ACOG). Practice Bulletin No. 48. Cervical insufficiency. *Obstet Gynecol* 2003; 102: 1091-96.
10. Incerti M, Ghidini A, Locatelli A et al. Cervical length <25mm in low risk women: A case control study of cerclage with rest versus rest alone. *American Journal of Obstetrics and Gynecology* 2007. 197(1): 105.
11. Royal Hospital for Women. Progesterone prevention of preterm labour. *Obstetric Clinical Guidelines Group* September 2008.
12. Romero R, Nicolaides K, Conde-Agudelo A, Tabor A, O'Brien JM, Cetingoz E, Da Fonseca E, Creasy GW, Klein K, Rode L, Soma-Pillay P, Fusey S, Cam C, Alfirevic Z, Hassan SS. Vaginal progesterone in women with an asymptomatic sonographic short cervix in the midtrimester decreases preterm delivery and neonatal morbidity: a systematic review and metaanalysis of individual patient data. *Am J Obstet Gynecol* 2012; 206:124.e1-19.
13. <https://www.socscistatistics.com/tests/chisquare/default2.aspx>