

Update on cervical cerclage

Lucian Pop^{1,2}, Madalina Piron^{1,2}, Viorica Radoi^{1,2}, Bianca Danciu¹, Nicolae Bacalbasa^{2,3}, Irina Balescu⁴,
Ioan D. Suciu⁵

¹"Alessandrescu-Rusescu" National Institute of Mother and Child Care, Bucharest, Romania

²Department of Obstetrics and Gynecology, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania

³Department of Visceral Surgery, Center of Excellence in Translational Medicine, Fundeni Clinical Institute, Bucharest, Romania

⁴Department of Visceral Surgery, Ponderas Academic Hospital, Bucharest, Romania

⁵Floreasca Emergency Hospital – General Surgery Department, Bucharest, Romania

ABSTRACT

A mid trimester miscarriage or a very preterm new-born can have lifelong psychological consequence over the parents. For many of them conceiving a new pregnancy and the gestational period is dominated by the permanent anxiety of losing the pregnancy again. Therefore, multiple types of interventions occurred with the purpose of postponing delivery. Although, it has been in used for more than 100 years, cervical cerclage, continues to be a hot topic.

Keywords: cervical cerclage, preterm birth, miscarriage

INTRODUCTION

Cervical suture is a procedure done to prevent further pregnancy loss. The reason for its use, it is the so-called cervical weakness or cervical incompetence. Ever since, the first procedure was performed, in 1902, this procedure was draw a lot of attention and was scrutinise multiple times, particular its indications [1]. Cervical insufficiency is an imprecise diagnosis, is a long and continuous process, with different factors influencing the outcome. There is no consensus regarding in terms of timing, type of cerclage, placement and follow up. Amniocentesis in emergency cerclage is advocated by some professionals and refuted by others [2].

PREDICTION OF PRETERM BIRTH

Different studies showed that in asymptomatic women a cervical length of 25 mm, is associated with a 25% risk of preterm birth, at a gestational age of 28 weeks or less. At 20 mm or less cervical length the risk of delivery before 32 weeks is around 42,4% [3].

CERVICAL CERCLAGE

There are several indications for cervical cerclage (Table 1) [1]:

TABLE 1. Cervical cerclage indications

History indicated cer-clage	A patient s history of increased foetal loss or preterm birth Performed at 11-14 weeks
Preterm birth	Birth before to 37+0 weeks' gestation
Ultrasound-indicated cerclage	Short cervix on Transvaginal scan between 14-24 weeks
Emergency cerclage	Cervical dilatation with exposed membrane, discovered through clinical examination or ultrasound

As it is presented in Table 1, cervical cerclage can be indicated based on historical findings, ultrasound findings and clinical findings. History indicated cerclage is usually placed between 12 and 15 weeks of pregnancy and is only based on the previous history of the patient (which usually refers to multiple second trimester pregnancy losses due to the apparition of painless dilatation). The ultrasound based indication refers to patients with a cervical length shorter than 25 mm between 16 and 23 weeks of pregnancy and with previous history of spontaneous preterm birth. The last indication is the physical examination based one and refers to patients between 16 and 23 weeks of gestation pre-

Corresponding author:

Lucian G. Pop

E-mail: popluciangh@icloud.com

Article History:

Received: 18 April 2022

Accepted: 30 April 2022

senting a cervical dilatation higher than 1 cm on physical examination [1-3].

DIFFERENT TYPES OF CERCLAGES [4-6]

Mc Donald Cerclage: - transvaginal tape at the isthmus junction,

Shirodkar tape: - high transvaginal tape with bladder mobilisation,

Transabdominal cerclage - performed via laparoscopy or laparotomy at the cervical isthmus junction.

Although the vaginal cerclage is more easily to be placed, it is effective only in a small number of patients such as cases presenting genuine cervical incompetence or in those with previous history of uterine cervix surgery.

In cases in which the vaginal approach fails, the abdominal route via laparoscopy or laparotomy should be taken in consideration. Although it has the disadvantage of being a surgical procedure, placement of cerclage via laparotomy or laparoscopy has the advantage of maintaining the biochemical and structural integrity of the uterine cervix, the device being placed higher in the cervix, usually at the level of the internal os. Therefore, this placement is thought to be associated with lower risks of infectious or inflammatory processes and meanwhile with a lower rate of cervical shortening [1-3].

Women at high risk include for preterm birth include:

- ▶ Previous cerclage insertion
- ▶ History of preterm birth or second trimester loss
- ▶ Trachelectomy
- ▶ PPROM before 34 weeks
- ▶ Uterine malformations

In the patients belonging to the aforementioned risk, a thorough assessment is necessary and follow up scan between 14 to 24 weeks. There is insufficient data regarding management of patients with previous low genital tract surgery: cone biopsy, LLETZ, diathermy, laser ablation [7-9]. In women with High BMI – cervical cerclage has no benefits [10,11].

REFERENCES

1. Shennan AH, Story L. Royal College of Obstetricians, Gynaecologists. Cervical Cerclage: Green-top Guideline No. 75 February 2022: Green-top Guideline No. 75. BJOG. 2022 Feb 24.
2. NICE, Preterm Labour 2015 [NG25], <https://www.nice.org.uk/guidance/ng25>.
3. Roman A, Rochelson B, Fox NS et al. Efficacy of ultrasound-indicated cerclage in twin pregnancies. *Am J Obstet Gynecol*. 2015 Jun;212(6):788.e1-6.
4. Alfirevic Z, Stampalija T, Medley N. Cervical stitch (cerclage) for preventing preterm birth in singleton pregnancy. *Cochrane Database Syst Rev*. 2017 Jun 6;6(6):CD008991.
5. McDonald IA. Suture of the cervix for inevitable miscarriage. *J Obstet Gynaecol Br Emp*, 1957;64(3): 346-50.
6. Benson RC, Durfee RB. Transabdominal Cervico Uterine Cerclage during Pregnancy for the Treatment of Cervical Incompetency. *Obstet Gynecol*. 1965;25:145-55.
7. Kyrgiou M, Athanasiou A, Paraskevaïdi M, Mitra A, Kalliala I, Martin-Hirsch P et al. Adverse obstetric outcomes after local treatment for cervical preinvasive and early invasive disease according to cone depth: systematic review and meta-analysis. *BMJ*. 2016 Jul 28;354:i3633.

CERCLAGE IN MULTIPLE PREGNANCY

Prematurity contributes significantly to perinatal mortality and this prematurity in twin pregnancy is driven by ART techniques. Ethology of spontaneous preterm pregnancy in twins is unclear and is the result of multiple causes. Uterine overdistension, cervical insufficiency, infection, were listed among triggers. Contractility is influenced by mediators such as corticotrophin releasing hormone (CRH), produced by the placenta, surfactant protein A, secreted by the lungs. Alongside spontaneous preterm pregnancy, iatrogenic preterm birth is increased in multiple pregnancy as deliveries are medically indicated.

Twin pregnancy is a high-risk pregnancy which sometimes has an unwanted outcome. Overall, just 3% of all pregnancies are multiple pregnancies, they make up 15% of all admittance to Neonatal intensive unit [12]. This show the high risk of adverse outcome regarding twins including conditions such as: cerebral palsy, multiple malformations, intrauterine growth restrictions and stillbirth. In terms of maternal outcomes, future mothers are at risk of preeclampsia, pregnancy induced hypertension, anaemia, pulmonary embolism, and postpartum haemorrhage.

Cervical cerclage is recommended by diverse organisation, in singleton while in twin pregnancy remains controversial [12]. In the retrospective cohort study, published by Roman et al., ultrasound indicated cervical cerclage, for a cervix less than 25 mm had no benefit, in reducing preterm delivery before 34 weeks. The same study showed that for a subgroup with a cervix less than 15 mm, cervical cerclage does reduce the preterm birth [3].

CONCLUSIONS

As this short review shows, cervical insufficiency is the endpoint of a multitude of factors. There is no “lingua franca” for management and follow up. So far, there is no evidence to support cervical cerclage in twins, moreover in some cases might cause more harm than good.

Conflict of interest: none declared
Financial support: none declared

8. Kyrgiou M, Koliopoulos G, Martin-Hirsch P, Arbyn M, Prendiville W, Paraskevaidis E. Obstetric outcomes after conservative treatment for intraepithelial or early invasive cervical lesions: systematic review and meta-analysis. *Lancet*. 2006 Feb 11;367(9509):489-98.
9. Sasieni P, Castanon A, Landy R, Kyrgiou M, Kitchener H, Quigley M et al. Risk of preterm birth following surgical treatment for cervical disease: executive summary of a recent symposium. *BJOG*. 2016 Aug;123(9):1426-9.
10. Farinelli CK, Wing DA, Szychowski JM, Owen J, Hankins G, Iams JD et al. Association between body mass index and pregnancy outcome in a randomized trial of cerclage for short cervix. *Ultrasound Obstet Gynecol*, 2012;40(6):669-73.
11. Abbott D, To M, Shennan A. Cervical cerclage: a review of current evidence. *Aust N Z J Obstet Gynaeco*. 2012;52(3):220-3.
12. Murray SR, Stock SJ, Cowan S, Cooper ES, Norman JE. Spontaneous preterm birth prevention in multiple pregnancy. *Obstet Gynaecol*. 2018 Jan;20(1):57-63.