



**Transabdominal Cerclage During Pregnancy:  
Case Report of a Women with Five Failed Cervical Cerclage**

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**Abstract**

*Cervical incompetence is one of the conditions that has had medical attention in many studies. The management of this condition was individualized according to the complexity of the case and the experience of the physicians. Cervical cerclage is one of the most commonly used management, and the transvaginal route commonly does it. In some complex cases, transvaginal cerclage might not be enough, and a transabdominal route might be needed, especially in some cases with complex obstetrics history.*

**Introduction**

Prematurity is one of the most common causes of neonatal morbidity and mortality. The most common etiology of preterm birth is cervical incompetence, which is defined as anatomical, physiological, or pathological failure of the cervix to uphold an intrauterine pregnancy in the second and early third trimester without the classic presentation of preterm birth labor. [1–7]

In this paper, we will report a lady who underwent an uneventful transabdominal cerclage after a complicated obstetrical history of five failed transvaginal cerclages. A happy outcome of near-term uncomplicated pregnancy with a live, healthy baby.

**Case Report**

A 42-year-old pregnant lady, G13P4, with four live births. Obstetrics history is complicated by eight miscarriages, of which 4 of them were in the second trimester. In addition, she had 3 of the live births preterm. Notably, all pregnancies that resulted in preterm births were previously managed by either prophylactic or emergency transvaginal cerclage and resulted in preterm birth.

Regarding the previous preterm births managed by transvaginal cerclage, the gestational age ranges between 29 -30 weeks. Both infants were admitted to Intensive care units for 2 months but are currently alive and well. Second-trimester miscarriage ranges from 19 to 26 with a bad outcome.

It is worth noting that all pregnancies were induced medically by ovulation induction using clomiphene citrate. Other medical supplements were also used during the antenatal period of this pregnancy and previous

pregnancies, including some evidence-based medicines such as Progesterone and other medications with no clear/enough studies or recommendations to be used for this indication, such as anticoagulants and antiplatelets.

The lady was seen at the preconception clinic, and she was offered a transabdominal cerclage as a part of the plan for the subsequent pregnancy due to the previous failed transvaginal route of this surgery. The surgery risks and benefits and the antenatal care plan after the surgery were discussed thoroughly.

After a successful pregnancy, a viable pregnancy with a normal prenatal screening test, including normal NT, was confirmed. Cervical length surveillance at 15 weeks of gestation showed a cervical length within the normal range of 35 mm (cut-off 25mm) and no clinical signs of cervical incompetence. Given her complex history and normal sonographic findings, a multidisciplinary discussion was arranged, and a transabdominal cerclage was recommended.

The recommended plan of transabdominal cerclage was discussed with the lady, and consent was obtained. A transabdominal cerclage was performed via a transverse suprapubic incision under general anesthesia with Polyester fiber thread size zero (Mersiline\*Ethicon). The surgery was uneventful, and the lady was discharged on postoperative day two.

Subsequent antenatal follow-ups at 19 and 23 weeks of gestations showed no evidence of shortening cervix and, later, no signs of preterm labor till 36 weeks.

The lady had near-term spontaneous labor at 36 weeks of gestation and had an uneventful emergency cesarean birth with the cerclage left in situ. An outcome of a live, healthy baby with an average APGAR score is that the baby did not need NICU admission.

The idea of the cerclage in place was discussed with the patient, as it can be used for later pregnancy without the need of placing a new one.

## Discussion

Cervical incompetence complicates up to 1% of all pregnancies, with a recurrence rate of second-trimester miscarriage up to 30 % [1-4]. The patient usually presents with painless cervical dilatation and the feeling of pelvic heaviness feeling in the second trimester with no uterine activity. Cervical insufficiency might be congenital or acquired. Congenital causes include conditions that affect the anatomy or the tissue components, such as müllerian anomalies, collagen and elastin deficiency, and diethylstilbestrol (DES) exposure in utero. Acquired incompetence of the cervix commonly happens after a cervical trauma, either due to surgery as in conization, loop electrosurgical excision procedures, or repeated dilation and curettage. [7]. In a large

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proportion of cases, the cause referred to be idiopathic but assumed to be due to anatomic distortion

Cervical cerclage by the vaginal route is the mainstay treatment for cervical insufficiency where a history of second-trimester miscarriage/preterm birth or preterm prelabour rupture of membranes is accompanied by sonographic evidence of a short cervix. The majority of women who have a history of ultrasound findings indicating cerclage will undergo this procedure near the end of their first or second trimester, given normal findings of prenatal screening test and confirmed viable pregnancy. Occasionally, in some cases, vaginal cerclage is found to be less effective than in other cases, showing the complexity of the etiology behind this condition. Hence, transabdominal cerclage can be indicated.[5].

Transabdominal cerclage was first described in the 60's as an open surgery. The laparoscopic approach was described later in 1998, offering an equally effective outcome but with a less invasive route than open surgery, adding the benefits of minimally invasive procedures such as faster recovery and less hospital stay.

Both open and laparoscopic surgical methods have equally shown remarkable neonatal outcomes of up to 90%.[6].

With different approaches used and similar pregnancy outcomes, the method of surgical entry depends on the surgical expertise and the available facilities.

Most of the Guidelines recommend performing the procedure during the preconception period or the first trimester of pregnancy. Although it could be done up to the 22nd week of gestation, most clinicians would advocate for transabdominal cerclage in the late first trimester to avoid possible complications of surgical intervention at a more advanced gestational age.[1].

Regarding the case reported earlier, transabdominal cerclage was done via laparotomy. During the surgery, the uterus was held up gently to optimize the visibility and accessibility of the cervix. Uterine vessels were identified and palpated bilaterally and retracted laterally to create an avascular space within the broad ligament at the level of the cervical internal os. A non-absorbable Mersilene\* thread of size 0 was placed and tied with the knot placed anteriorly. Placement of the cerclage above the cardinal and uterosacral ligaments is assumed to be the reason for the success and superiority of this approach [6].

Interestingly, some studies showed equal success rates for future pregnancies with a retained cerclage. The Society for Maternal-Fetal Medicine suggests a cesarean birth between 37 to 39 weeks of pregnancy unless indicated earlier [1-8].

However, transabdominal cerclage placement through laparotomy carries several disadvantages concerning the open surgical nature of this procedure. One of the significant drawbacks is the multiple exposures to major

laparotomies during the first pregnancy, namely one to place the cerclage and the other to perform a cesarean birth later in pregnancy. In addition to the known surgical complications such as the risk of infection, bleeding, VTE, and trauma, less commonly serious pregnancy events may occur, such as preterm labor, intrauterine fetal death, and uterine rupture or dehiscence, making the management more complex with the presence of intrabdominal cerclage in place. In those cases, the suture may need to be removed, or the pregnancy may be terminated via hysterotomy [6]. Other possible complications like suture migration and rectouterine fistula have been reported. Fortunately, none of these were observed in our patient. Despite all reported adverse events, this procedure remains indispensable in selected high-risk scenarios. Lastly, the benefits should outweigh the risks in order to justify the procedure [3-4].

## Conclusions

Transabdominal cerclage can be promising to many ladies who are struggling with second trimester miscarriages, especially with failed transvaginal cerclage. It should be reported promptly for further data collection to obtain a proper recommendation.

We acknowledge the low number of indicated cases needed for training, but Staff training is crucial, especially for the laparoscopic route.

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