# PRECONCEPTIONAL TRANSABDOMINAL CERVICAL CERCLAGE: CASE REPORT OF A WOMAN WITH SIX FAILED TRANSVAGINAL CERCLAGES

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## ABSTRACT

Preconception transabdominal cervicoisthmic cerclage is a safe and effective option for selected group of patients with cervical insufficiency and have failed conventional conceptional cervical cerclages or with severely damaged cervix. We present here a preconception transabdominal cervicoisthmic cerclage which was placed by laparotomy for a woman with six failed conceptional transcervical cerclages with recurrent late second trimester pregnancy losses. The woman conceived spontaneously and delivered at term with an alive male healthy new born with no maternal and fetal complications. A brief discussion of the indication, procedure and complications of Preconception transabdominal cervicoisthmic cerclage is also included.

**KEY WORDS**: Transabdominal cerclage, Cervical insufficiency, Recurrent pregnancy loss

(Ethiopian Journal of Reproductive Health; 2019; 11;3:63-67)

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## INTRODUCTION

Cervical incompetence affects 0.5% to 1% of all pregnan¬cies and the risk of recurrence is estimated to be 30%. The typical pres¬entation is pelvic pressure and cervical dilatation without uterine contraction or leakage of liquor in the first and second trimester of gestation[1].

Cervical cerclage is performed both for treatment and prophylactic purposes in cases of cervical insufficiency. Commonly it is done through vaginal approach at the end of first trimester in cases diagnosed with cervical insufficiency during pregnancy. The vaginal approach is not always feasible to perform in small group of patients who have anatomic cervical distortion. In such patients the transabdominal approach has been done successfully1. The transabdominal cerclage was first described in 1965 and the laparoscopic modification was first reported in 1998. Published reports suggest very high neonatal survival rates with both approaches, with delivery rates of viable infants consistently in the range of 85 to 90%. The procedure has been done in pregnant women, either towards the end of the first trimester or early in the second trimester. Since the non-pregnant cervical isthimus is firm, it gives the opportunity for the surgeon to avoid injuring the blood vessels[1-3].

A history of midtrimester pregnancy loss, the circumstances of previous failed cerclage and a seriously deficient cervix are major indications for abdominal procedure[4]. Here we describe a case with severe cervical damage with failed six cervical cerclages ending up six consecutive pregnancy losses.

### CASE PRESENTATION

A 38 years old GIX PIII with two live children presented with recurrent pregnancy losses spanning for the last 16 years. Eight of the pregnancies were with transvaginal cerclages done on each pregnancy. Cerclages were done since the first pregnancy ended up in mid-trimester pregnancy loss. She was told to have "cervical problem" and, during her second pregnancy, she had a transvaginal cervical cerclage. The pregnancy progressed to 33 weeks at which time she developed preterm labor and delivery. The preterm baby survived. She also had cerclage with the third pregnancy delivered a live female baby at 40 weeks of gestation. The fourth pregnancy, with cerclage, culminated in preterm labor and delivery at the 28$^{th}$ week and the neonate didn't survive. The fifth, sixth, seventh and eighth pregnancies also ended up in second trimester abortions after transcervical cerclages. The first five cerclages were done in Ethiopia while the seventh and eighth pregnancy were undertaken abroad. The seventh and eighth pregnancies failed at 20$^{th}$ and 25$^{th}$ week of gestation, respectively.

She presented to St. Paul's Hospital Millennium Medical College after five years of the eighth pregnancy. Her general medical history was unremarkable.

Her blood pressure was 110/70 mmHg, PR 84 beats per minute and respiratory rate was 18 breaths per minute.

Vaginal speculum examinations revealed a ragged cervix with healed old tears and remnants on postero-lateral on the left side. It has a gap on the posterior aspect on the left side reaching to the isthmus and irregularities alongside (Figure 1).

The uterus was eight weeks sized central anteverted and anteflexed. The adnexae were unremarkable. The rest of the physical findings were unremarkable.

Transvaginal ultrasound measured the cervical length to be 18 mm with good endometrial outline. Both ovaries visualized with good numbers of follicles (Figure 2).

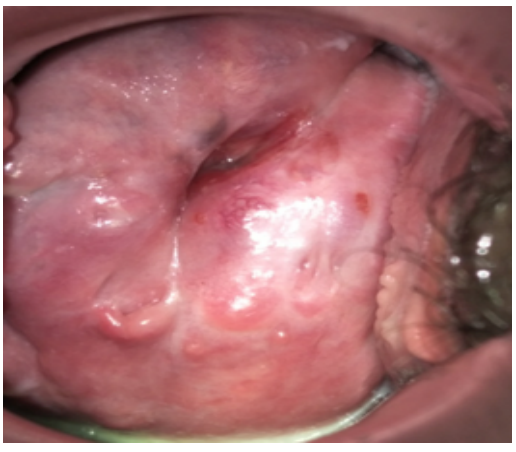

Figure 1: The appearance of cervix on inspection with vaginal speculum showing the left lateral tear cleft on the exo cervix which extends to the internal cervical os.


Figure 2: Transvaginal ultrasound scanning which shows open cervical canal and very short cervix as measured 18 mm.

Cervical insufficiency with very short and damaged cervix and failed transvaginal cerclages during previous pregnancies ending in recurrent second trimester pregnancy losses was entertained.

She was counseled on the risks and benefits of interval transabdominal cerclage placement. The concerns of the patient were discussed in two sessions. After ascertaining her understanding of and her agreement with the innovative nature of the interval transabdominal cerclages, the procedure was done on 28/02/2017.

**THE PROCEDURE**: The anesthesia was spinal with sedation. The abdomen entered through pfannenstiel incision with clear anatomy of the peritoneal cavity with no adhesions. The uterus was normal sized with healthy looking tubes and ovaries bilaterally. The uterus was mobilized from the pelvic cavity. The lower segment was accessed. The bladder peritoneum was reflected and the isthmus exposed. The avascular space of window created between the uterine vessels and the uterus. This was done on both sides. The merseline tape disconnected from the needles passed on the window on the left side anteriorly then posteriorly through the window created on the right side to tie anteriorly and fixed with 0 silk. It was tight enough just to appose on the isthmus. The knot is then secured further by taking each free end to the underlying band, and the peritoneum is sutured over the knot. Hemostasis secured. The abdomen closed in layers after counts declared correct. The patient left the operation theater stable. She had smooth post-operative course and discharged from the hospital on the next day of surgery. She was allowed to conceive after three months of surgery.

She conceived spontaneously after 8 months of the surgery. She was given progesterone dydrogesterone 400 mg twice daily vaginal suppositories for the first sixteen week of gestation. She had smooth pregnancy courses. She was given dexamethasone four doses at 28 weeks of gestation anticipating preterm labor and delivery. Termination by cesarean section was done at 37 weeks and 3 days of gestation since she had frequent Braxton Hicks contractions. The intraoperative finding was formed lower uterine segment with intact uterus. The tape was totally covered with seroasa all round. The outcome was a male neonate weight 3115grams with APGAR scores of nine and ten in the first and fifth minutes, respectively. The cerclage was not removed since she was considering one more child.

Removal of the tape was left to the subsequent cesarean delivery. Both the mother and the newborn were discharged from the hospital in stable conditions. On subsequent evaluations both the mother and baby were quite healthy.

## DISCUSSIONS

Cervical insufficiency can be of congenital or acquired causes. In case of acquired cervical incompetence the causes are: an injury during previous labor, previous abortions (especially in cases when the uterus cervix was dilated more than 10 mm) or conization of the cervix[2].

Functional cervical insufficiency is most frequently caused by a multiple pregnancy or influence of relaxin and prostaglandins on cervix tissue. In our case birth trauma was the likely cause.

The indications for trans-abdominal cerclage before conceptions are: previous vaginal cerclages which had failed to work, extremely short cervix like in cases of cervical conization, extremely lacerated cervix with deep rupture, agenesis of the cervix[2]. Transabdominal placement of preconception cervical cerclage is accepted

as the treatment of choice in women at high risk with previously failed vaginal cerclage or very short vaginal portions of the cervix. Severely lacerated cervix was the indication for the last transabdominal cerclage (We are unable to retrieve adequate information for the initial indication of the first transvaginal cerclage).

Majority of reports present favorable outcomes with pregnancies after transabdominal cerclage, 80-85% of pregnancies were terminated at 38 weeks of gestation by cesarean section. Some authors described cases of successful laparoscopic cerclage performed even in early second trimester[2].

The main disadvantage of the transabdominal approach is the need for two open laparotomies, one for cerclage and one for cesarean section. Postoperative bowel adhesion & longer hospitalization and recovery are also the disadvantages of open procedure[1]. Two possible disadvantages of interval procedures are first trimester miscarriages and post-procedure infertility. It would appear sensible to limit dissection of the paracervical tissues to minimize the possibility of adhesion formation in the pelvis. First trimester miscarriages are usually possible to manage expectantly or by surgical evacuation, as the presence of a suture does not prevent insertion of a suction canula large enough for this gestational age[1].

Some of the complications of transabdominal cerclage placement by laparotomy are; bleeding, visceral injury, loss of pregnancy and anesthetic risk none of which happened in our patient. Preterm labour, midtrimester rupture of membranes and intrauterine fetal death are challenging complications after transabdominal cerclage. In this situation either the suture needs to be removed or the pregnancy is terminated via hysterotomy. The other reported complications of transabdominal cerclage, such as suture migration, rectouterine fistula some years later uterine rupture and intrauterine growth restriction are rare. In cases of posterior knot, the suture may be removed via a posterior colpotomy[5].

The transabdominal approach is beneficial in women with short cervices of congenital origin or secondary to previous surgical procedures, and in those with severely lacerated cer¬vices due to obstetric trauma.

Potential advantages of transabdominal cerclage include higher placement relative to the level of the internal os, decreased incidence of slippage, and the ability to leave the stitch in place between pregnancies[3].

Laparoscopic surgical techniques have now increasingly re¬placed traditional abdominal approaches. Laparoscopic place¬ment of cervical cerclage has many theoretic advantages. The procedure can be safely performed before pregnancy, avoiding the need for surgery during pregnancy[1]., Dawood and Farqhuarson reported on a comparison of 21 preconceptual cases and 40 first trimester cases of open transabdominal cervical cerclage, concluding that preconception cerclage yields a more favorable pregnancy outcome[1]. This case is an eye opener in our set up for those patients with damaged cervix due to different reasons. This is the first case in this country to our knowledge. The future outlook will be laparoscopic approach which offers an opportunity to produce fewer adhesions, less drug administration and lower costs of treatment, faster recovery, less post -operative pain and shorter hospitalization[2].

## CONCLUSIONS

Transabdominal cerclage is a promising option in the treatment of cervical insufficiency in selected group of patients. This case is an eye opener for the future of interval cervical cerclage both with laparotomy and laparoscopic approach in set ups like ours.

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