

Preconception laparoscopic transabdominal cervicoisthmic cerclage (TAC) placed in older women

Laparoskopowy przezbrzuszy szew szyjkowy (TAC) u starszych kobiet

Paweł Pawłowicz¹, Małgorzata Uchman-Musielak¹, Piotr Hincz², Grzegorz Jakiel¹

¹1st Department of Obstetrics and Gynecology of the Medical Centre of Postgraduate Education, Warsaw; head of Department: prof. dr hab. n. med. Grzegorz Jakiel

²Department of Materno-Fetal Medicine and Gynecology, Polish Mother's Memorial Hospital – Research Institute in Lodz; head of Department: prof. dr hab. n. med. Jan Wilczyński

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Streszczenie

W artykule przedstawiono przypadek 38-letniej pacjentki z wywiadem nawykowych poronień z rozpoznaniem niewydolności cieśniowo-szyjkowej, u której założenie szwu szyjkowego nie było możliwe ze względów technicznych i pacjentka została zakwalifikowana do założenia szwu okrężnego na cieśń szyjki macicy z dostępu brzuszno-drogą laparoskopową. Zabieg trwał około 30 min. Pacjentka została wypisana dnia następnego. Dwa miesiące od zabiegu pacjentka zaszła w ciążę, ciąża przebiegała fizjologicznie, pacjentka urodziła w 39. t.c. w wyniku cięcia cesarskiego zdrowego noworodka płci żeńskiej o masie 3450g ocenionego na 10 punktów w skali Apgar.

Słowa kluczowe: niewydolność cieśniowo-szyjkowa, poronienia nawracające, szew okrężny z dostępu brzuszno.

Summary

We report a case of a 38-year-old patient with a history of recurrent miscarriages, with the diagnosis of cervical incompetence, in whom transvaginal cerclage was not technically possible and preconception laparoscopic transcervical abdominal cerclage was performed. The operation lasted for 30 minutes and was completed successfully. The patient was discharged the next day. The patient became pregnant two months later, the course of pregnancy was physiological and she gave birth at term by a cesarean section to a female newborn with a weight of 3450g and 10 points in Apgar score.

Key words: cervical insufficiency, recurrent miscarriages, laparoscopic transabdominal cervicoisthmic cerclage.

Introduction

Recurrent miscarriages remain an important contribution to neonatal morbidity and death. One etiology of fetal loss is cervical insufficiency. Cervical insufficiency is a diagnosis based on an obstetric history of a second- or early third-trimester fetal loss, after painless cervical dilation, prolapse, or rupture of the membranes, and expulsion of the fetus despite minimal uterine activity [1, 3, 4]. Cervical incompetence is estimated to complicate approximately 0.1-1.0% of all pregnancies [1, 2]. Various surgical techniques and approaches have been used to prolong pregnancy and improve the perinatal outcome.

Most cerclage operations for cervical incompetence are performed transvaginally and consist of vaginal placement of a cervical suture. However, a small subset of patients with cervical incompetence cannot be adequately managed with a transvaginal cerclage operation because of extremely short, deformed and/or scarred cervixes. Transabdominal cerclage has been proposed as an alternative to repeated transvaginal cerclages in the patients who have previously delivered very early despite a prophylactic transvaginal cerclage. Transabdominal placement of the cervical suture is also an alternative in a small subset of women in whom transvaginal placement of the suture is technically difficult or not possible. The original abdominal cerclage was de-

Address for correspondence:

Paweł Pawłowicz, Department of Gynecology and Obstetrics, Czerniakowska 231, 00-416 Warsaw

scribed by Benson and Durfee in 1965, and subsequent reports confirm a 81-89% cumulative success rate [13]. The procedure is performed after laparotomy.

The disadvantages of the transabdominal approach have been the necessity of a laparotomy incision, longer hospitalizations, and longer patient recovery. Advances in the field of minimally invasive surgery now allow laparoscopic placement of sutures within the abdominal cavity [8]. Laparoscopic abdominal cerclage (LC) can be performed this way. LC can be performed during the first trimester of pregnancy or as an interval procedure, when the patient is not pregnant. In 1998, the first successful cases of laparoscopic transabdominal cerclage were published [9]. We describe in this report our experience with laparoscopic cerclage and subsequent pregnancy.

Case report

A 38-year-old female, gravida 5, para 0, was referred to the First Department of Gynecology and Obstetrics of the Medical Center of Postgraduate Education in Warsaw in November 2010 for evaluation of an incompetent cervix. She had a history of two first-trimester pregnancy losses followed by two mid-trimester pregnancy losses despite two vaginal cerclages. The sonographic examination showed that the length of the cervix was 11 mm. She was qualified to the preconception transabdominal cervicoisthmic cerclage. The procedure was performed under general anesthesia before pregnancy as an interval procedure. The woman was placed in the dorsal lithotomy position and a Foley catheter was inserted. The cervix was grasped with a tenaculum anterior to the cervical os and a 5 mm dilator was placed into the cervix for uterine manipulation and calibration of the os. Laparoscopy was then performed with a 10-mm trocar placed at the umbilicus by the direct insertion technique. Five-millimeter trocars were inserted under visualization in the right and left lower quadrants. The peritoneum of the uterovesical reflection was incised transversely with laparoscopic scissors, and the incision was extended to expose each lateral side of the isthmus. The bladder was advanced downward. The uterine arteries and bifurcation of the ascending branch were identified. A window was then created bilaterally with a laparoscopic dissector through the broad ligament medial to the uterine vessels at the level of the internal os. A 5-mm non-absorbable polyether suture was placed through the window, around the posterior aspect of the uterus at the level of the uterosacral ligaments and up through the window on the other side of the uterus. The non-absorbable suture was positioned to lie flat around the uterus and tied anteriorly with flat square knots. The peritoneum was not sutured. The pelvis was rinsed with an isotonic saline solution, hemostasis was confirmed and the procedure was completed in the usual

manner. The operation lasted for 30 minutes and blood loss was less than 100 ml. (Operator: Paweł Pawłowicz) The post-operative period was uneventful and she became pregnant two months later. The accurate position of the suture was checked by vaginal ultrasonography. The course of pregnancy was physiological and she gave birth at term to a female newborn with a weight of 3450 g and 10 points in Apgar score.

Discussion

The consistent success of the transabdominal cerclage has been now well established for more than three decades. Many authors reported a cumulative fetal survival rate of about 90% as compared with a rate of 20% in the untreated pregnancies of the same patient [3, 5]. Indications for transabdominal cerclage have been described in detail, with the two most common being a severely foreshortened cervix preventing transvaginal cerclage and previous failed transvaginal cerclage in prior pregnancy [6]. The indications remain the same for the laparoscopic approach to transabdominal cerclage. The laparoscopic cerclage offers the benefits of a reduced hospital stay and faster recovery. For women who require cervical cerclage and who have marked damage of the cervix, the most satisfactory approach is via the transabdominal route. When the encircling ligature is applied from above, its application at the proper level is ensured, it is well retained and cannot drift downwards as it is fixed to the anterior wall of the isthmus. This approach avoids the necessity to dissect through infected tissue planes, as is sometimes the case with the vaginal approach. Adequate exposure is essential.

This technique also gave a chance to 75% of patients to have another pregnancy with intact structure [11].

Any benefits of transabdominal cerclage must be weighed against its increased operative risks. Patients undergoing transabdominal cerclage must undergo 2 procedures in the index pregnancy, one for placement of the cerclage and one for the cesarean delivery. Although no major complications were observed in this series, these procedures are associated with higher risks of bleeding, injury to other organs, infection, and thromboembolism [7, 9]. All patients undergoing such procedures should be informed about these potential risks. Given these facts, patients may not believe that the benefits outweigh the risks.

Transabdominal cerclage should therefore be performed only by experienced operators and only for very clear, defined indications. According to the literature and our experience, such indications include a prior failed transvaginal cerclage or an absent intravaginal portion of the cervix, making transvaginal cerclage impossible [10, 12, 14].

In summary, in patients with a prior failed transvaginal cerclage, transabdominal cerclage was found

to be associated with better outcomes than repeated transvaginal cerclages.

Laparoscopic abdominal cerclage is a safe, effective alternative to abdominal cerclage placed at the time of laparotomy in treating women with recurrent second trimester losses due to cervical insufficiency and a prior history of a failed transvaginal cerclage.

We conclude that the transabdominal cervicoisthmic cerclage offers a high rate of fetal salvage with a minimum of complications in patients with extremely poor obstetric histories as a result of cervical incompetence, where a vaginal cerclage is not warranted.

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