Hysteroscopy-Guided Natural Orifice Repair of Isthmocele

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Abstract

Isthmocele can be defined as a hypoechoic field within the lower uterine segment, indicating a discontinuation of the myometrium at the uterine scar of a previous cesarean section. Postmenstrual spotting, pelvic pain, dysmenorrhea, dyspareunia, uterine rupture, cesarean scar pregnancy, and secondary infertility could be seen as the complications of existing isthmocele. Such defects are prevalent with the increasing number of cesarean deliveries. A 39-year-old woman who had three prior cesarean sections complaining irregular uterine bleeding for 2 years was examined. A uterine scar defect was observed. A hysteroscopy-guided natural orifice approach was planned to repair the defect. The patient was discharged without any complication in her postoperative 6th h. She had no pain or irregular bleeding in her 2-week postoperative visit.

Keywords: Hysteroscopy, natural orifice transluminal endoscopic surgery, uterine scar defect

Introduction

An isthmocele is a discontinuity or anechoic gap in the anterior uterine wall in a previous cesarean scar.[1] The prevalence of isthmocele differs between 6.9% and 69% due to the terminology and the type of diagnosis; postmenstrual bleeding, dysmenorrhea, dyspareunia, and chronic pelvic pain, cesarean scar ectopic pregnancy and abscess formation could be seen as symptoms and complications.[2] Up to now, several techniques have been described for the surgical management of isthmocele. These procedures are pure laparoscopy, combination of laparoscopy and vaginal surgery, and pure vaginal approach. The chosen treatment method depends on the thickness of the myometrium lying over the cesarean scar defect and the dimension of the defect.[3] However, to date, no currently mounting evidence about the ideal surgical approach has been presented. The data on pure vaginal techniques are also unsatisfactory, due to technical difficulties such as insufficient excision of the scar defect and also because of small sample size of the studies.[4] In this case, a hysteroscopy-guided natural orifice management of isthmocele is presented with a brief literature review.

Case Report

A 39-year-old woman with three previous cesarean sections admitted to our outpatient clinic with 2-year-long irregular uterine bleeding. On her transvaginal ultrasound (TVUS) evaluation, an 8 mm x 3 mm isthmocele was observed and the myometrial thickness was 2 mm. A hysteroscopy-guided natural orifice repair of the defect was planned. The patient was laid in dorsal lithotomy position under general anesthesia. A diagnostic hysteroscopy was performed to detect the cesarean scar defect and to confirm the exact location of isthmocele. Sharp and blunt dissections were performed to along with the vesicovaginal fascia to push away the bladder above the defect, subsequently [Figure 1]. Hysteroscopic transillumination was used to identify the proper position and the margins of isthmocele. The fibrotic scar tissue was

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The patient was discharged at the postoperative 6th h without any complication. In her 2-week postoperative visit, she had no pain or irregular bleeding. TVUS showed a linear endometrial thickness with no scar defect on her previous cesarean incision site.

**Discussion**

The hysteroscopy-guided transvaginal approach to repair isthmocele is feasible by eliminating the inadequate identification of the scar defect which was the most reported obstacle of pure vaginal approach. Besides, as a pure natural orifice approach, it is a day care procedure when compared to conventional laparoscopy.

Luo et al.\(^5\) reported the results of 42 patients who were managed through pure transvaginal approach. They reported a clinical success rate of abnormal uterine bleeding up to 92%–9%. The mean duration of surgeries was 75 ± 45 min and the mean hospital stay was 6.5 ± 4.5 days. They speculated that the higher incidence of postoperative complications was likely to associate with incomplete diverticulum excision. They also reported that a hysteroscopic approach before the vaginal repair could be a safer option to identify the defects.\(^5\)

In another study, Chen et al.\(^6\) performed pure transvaginal surgery in the management of 64 patients with isthmocele. The mean duration of the surgery was 33.6 ± 4.1 min which was shorter than Luo et al. However, the clinical success rate was 85%–9% that was lower compared to Luo et al. The mean duration of hospital stay was 6 days. They also stated that the failure rates could be associated with the incomplete removal of scar tissues.\(^2\)

Zhang compared the outcomes of isthmocele repair through transvaginal or laparoscopic approaches in total of 124 patients. The vaginal surgery was performed in 65 patients, while laparoscopic surgery was performed in 59 patients. The mean duration of the procedure was 60 ± 20 min in vaginal surgery group and it was 110 ± 40 min in laparoscopy group. Besides, the mean blood loss was remarkably less in vaginal approach.\(^5,7\) The mean postoperative hospital stay was almost the same for the both study group (6.4 vs. 6.5 days).\(^7\) Although these studies included the utilization of antibiotherapy and urethral catheter in hospital conditions, they did not discuss the long-stay explanation. Compared to previous reports,\(^5,7\) our procedure was a day care procedure and the mean duration of the surgery was shorter.

In regards to previous limitations of the case series mentioned above, to increase the cure rates, hysteroscopy guidance was utilized to better visualize the scar tissue in our case. Similarly, Candiani et al. presented a case of hysteroscopy-guided transvaginal management of isthmocele in a 26-year-old patient.\(^4\) The patient had a cesarean scar defect of 22 mm × 11 mm with a residual myometrial thickness of 2 mm. She was discharged on her postoperative 1st day. The patient had no further postmenstrual bleeding and was asymptomatic at 1-month follow-up.\(^4\)

To conclude, hysteroscopy-guided natural orifice repair of isthmocele could be a feasible alternative to laparoscopy-only procedure with shorter duration of surgery and shorter hospital stay. Besides, our approach seems to be better in the identification of the scar defect compared to that of pure vaginal approach in regards to achieve higher cure rates. However, our results should be confirmed with larger case series.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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