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Case report

Spontaneous pregnancy after pessary placement in a patient with infertility and advanced pelvic organ prolapse

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ABSTRACT

To highlight possible association of advanced pelvic organ prolapse with infertility and its successful outcome following conservative management. We report herein a 38-year-old para 1, non-overweight woman who presented with secondary infertility without any factors for infertility except for an advanced POP. She had intrauterine insemination (IUI) performed twice at a local clinic and *in vitro* fertilization-embryo transfer (IVF-ET) program twice in our institute unsuccessfully. She conceived spontaneously after vaginal pessary placement and delivered, vaginally, a healthy female baby weighing 3,365 g at the 38th week of gestation. Advanced POP appears to be an important risk factor for infertility. After completing an infertility workup, pessary application can be the first-line treatment modality for women with unexplained infertility due to advanced POP.

Introduction

The major causes of infertility include ovulatory dysfunction (15%), tubal and peritoneal pathology (30–40%), and male factors (30–40%). Uterine pathology is generally uncommon, while other causes of infertility are unexplained.[1] Advanced pelvic organ prolapse (POP), International Continence Society (ICS) Stages III and IV, especially when occurring in young women, causes serious disabilities, including infertility.[1] The condition is difficult for gynecologists to manage. The management of patients with uterine prolapse should be individualized based on patients' complaints and desires. The authors report herein a successful spontaneous pregnancy after insertion of a pessary in a 38-year-old woman with secondary infertility and advanced POP.

Case report

A 38-year-old Taiwanese woman, para 1, presented to us for secondary infertility ongoing for 4 years. Ten years ago, she had delivered, vaginally, a female baby weighing 3975 g. The delivery was complicated with a fourth degree vaginal laceration. Five years later, she wanted to conceive again. She had intrauterine insemination performed twice at a local clinic without success. At the infertility clinic, pelvic examination revealed a POP with the cervix protruding out of the vaginal orifice during abdominal straining. She experienced frequent difficulty in urination and constipation. Her body mass index was 23.5 kg/m^2. Ultrasound images of the uterus and ovaries were unremarkable. Laboratory investigations

Conflicts of interest: The authors have nothing to disclose.

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revealed that antimüllerian hormone, serum prolactin, luteinizing hormone, follicle-stimulating hormone, and estradiol were all within normal levels. Hysteroscopy showed a normal uterine cavity and hysterosalpingogram showed a smooth uterine cavity with bilateral patent tubes. Her husband's semen analysis showed mild oligoasthenospermia.

After the infertility workup, the couple requested an *in vitro* fertilization-embryo transfer (IVF-ET) program to expedite the conception process. She underwent two cycles of IVF-ET and one cycle of thawed frozen ET in between, but all attempts had failed. Due to her complaints of a bearing-down sensation and difficulty with urination after the embryo transfer, even after resting most of the day, she was referred to the Urogynaecology Clinic.

At the Urogynecology Clinic, pelvic examination revealed that she had a Stage III POP on the ICS-POP-Q grading system (Point A anterior = + 2, Point B anterior = + 6, cervix = + 6, genital hiatus = 5, perineal body = 2, total vaginal length = 11, Point A posterior = − 1, Point B posterior = + 4, posterior fornix = + 4; Figure 1). Urodynamics study revealed bladder outlet obstruction with a 1-hour pad test of 0.5 g. Due to her desire for fertility, a pessary was suggested for her advanced POP. A donut pessary (Figure 2) was chosen because it has a hole to allow embryo transfer. A trained physiotherapist fitted the patient with the pessary. She was taught how to clean and maintain the pessary. The pessary was removed and cleaned when the patient had a shower, then reinserted and maintained. After insertion of the pessary, the symptoms of bearing down and voiding dysfunctions were relieved. She became pregnant naturally within 3 weeks. She continued to use the pessary until the 16th week of gestation. During this period, the POP decreased to Stage II. The course of the pregnancy was smooth and the patient delivered, via spontaneous vaginal delivery, a healthy female baby at the 38th week of gestation, weighing 3365 g. She came to the outpatient clinic 2 months after the delivery and presented with a Stage III prolapse on the ICS-POP-Q grading system (Point A anterior = + 1, Point B anterior = + 3, cervix = + 3, genital hiatus = 5, perineal body = 2, total vaginal length = 12, Point A posterior = − 1, Point B posterior = + 1, posterior fornix = + 1). Pelvic floor muscle exercise and continuation of pessary use were advised.

Figure 1. Uterine prolapse.

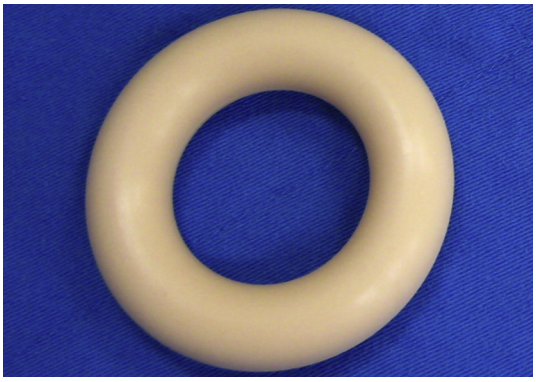

Figure 2. Doughnut pessary.

Discussion

To the best of our knowledge, this is the first case report of spontaneous pregnancy after insertion of a vaginal pessary in a patient with infertility and advanced POP. This patient had a traumatic vaginal birth in her first pregnancy, which is a risk factor for advanced POP. Most patients with this condition would be considered for uterine sparing surgery to be performed for the prolapse but we managed her conservatively with the insertion of a vaginal pessary.

Vaginal pessaries are mainly made of medical-grade silicone. Silicone vaginal pessaries are soft, pliable, odorless, biologically inert, nonallergenic, noncarcinogenic, and have long shelf life. The advantages of pessary treatment include low cost, low risk, effectiveness, and conservativeness.[2] In this patient, a doughnut pessary was prescribed for further treatment of infertility. The design of the pessary allows an IVF-ET procedure to be performed, as reported in a case of successful pregnancy of a woman with total POP who conceived successfully after pessary insertion and IVF-ET procedure.[3]

This woman complained of voiding symptoms and the feeling of a bearing-down sensation. These symptoms are classical complaints of women with POP. The urinary symptom is due to kinking of the urethra and the bearing-down sensation is due to the stretching of the supports of the uterus. Insertion of a pessary helps in restoring the anatomy of the uterus, bladder, and urethra, and hence alleviating these symptoms.[4]

POP is reported to have a negative impact on female sexual function. In a study by Fernando et al,[4] it was interesting to note that there was a significant improvement in sexual function (both frequency and satisfaction) 4 months after pessary use. Most women seen in their clinic were anxious about having sexual intercourse after insertion of the vaginal pessary. The findings of the study provide reassurance to women that a vaginal pessary may not interfere mechanically with sexual activity and may even improve sexual function. Anatomical restoration of the uterus and satisfaction with sexual intercourse would have been the factor for natural conception in this patient.

The vaginal pessary was continued during pregnancy to prevent prolapse of the cervix and local trauma. Prolapse of the cervix would lead to swelling, infection, and further related complications, therefore it is also important to maintain good hygiene.[5]

In conclusion, advanced POP is a risk factor for infertility. After completing an infertility workup, a vaginal pessary application can be the first-line treatment modality for women with infertility

caused by advanced POP, to alleviate symptoms and used throughout pregnancy to prevent complications.

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