Gonadotropin-releasing hormone agonist contributes to the successful implementation of in vitro fertilization in a patient with cervical endometriosis: a case report

Turui Yang, MD; Jieling Feng, MD; Lu Luo, PhD; Dan Zhang, PhD; Minghui Chen, PhD

This is a case report of a nulliparous young woman who suffered from prolonged menstruation and infertility for 1 year. Magnetic resonance imaging and a transvaginal ultrasound examination revealed cervical endometriosis. Treatment with a gonadotropin-releasing hormone agonist stopped the abnormal bleeding and enabled investigators to conduct a hysterosalpingogram, which suggested bilateral hydrosalpinx. Subsequently, the patient underwent in vitro fertilization and had a live birth after frozen-thawed embryo transfer with gonadotropin-releasing hormone agonist pretreatment.

Key words: cervical endometriosis, gonadotropin-releasing hormone, infertility, in vitro fertilization, transvaginal ultrasound examination

Introduction

Cervical endometriosis is an uncommon type of endometriosis with an incidence rate of 1.6% to 2.4%.[1] Cervical endometriosis, which is usually found retrospectively on histopathologic reports, can be asymptomatic or present with symptoms, including bloody intermenstrual vaginal discharge, dysmenorrhea, postcoital bleeding, and even sudden life-threatening hemorrhage.[1–4] However, there are few reports of patients with cervical endometriosis presenting with infertility. Herein, we report the case of a patient with cervical endometriosis who was referred for infertility and became pregnant after in vitro fertilization embryo transfer (IVF-ET) treatment.

Case report

A 28-year-old woman presented with a 1-year history of infertility and prolonged menstruation. She had dysmenorrhea and dyspareunia, and her menstrual period lasted for >20 days in the past year. Magnetic resonance imaging (MRI) at another hospital revealed a cystic mass in the posterior cervical lip. A speculum examination revealed a hypertrophic cervix without visible lesions. Transvaginal sonography (TVS) showed a cystic lesion with ground-glass echogenicity (20 × 13 mm) in the posterior cervical lip (Figure, a), which suggested cervical endometriosis. There were no atypical cells on cervical cytologic examination. The serum cancer antigen 125 (CA125) level was elevated (276.1 U/mL). The serum anti-Müllerian hormone level was 2.86 ng/mL.

Triptorelin acetate (3.75 mg) was administered on day 3 of menstruation and repeated 28 days later to stop the long-lasting vaginal bleeding and perform hysterosalpingography, which revealed bilateral hydrosalpinx. To achieve pregnancy, the patient underwent IVF with a gonadotropin-releasing hormone (GnRH) agonist long protocol. Pituitary down-regulation with triptorelin acetate (0.8 mg) was initiated in the midluteal phase. After 14 days, the cystic lesion in the cervix was reduced from 20 × 13 mm to 9 × 6 mm (Figure, a,b), the serum CA125 level was decreased to 33.2 U/mL, and gonadotropin stimulation was initiated. Final oocyte maturation was induced when 3 follicles with a diameter of ≥17 mm were visualized on ultrasonography. Oocyte retrieval was performed 36 hours after human chorionic gonadotropin administration. Consequently, 16 oocytes were retrieved, 12 of which were fertilized normally. All embryos, including 2 cleavage embryos and 3 blastocysts were frozen to prevent ovarian hyperstimulation syndrome.

Six months later, triptorelin acetate (3.75 mg) was administered in the midluteal phase, and 28 days later, hormone replacement endometrial preparation was performed and 1 blastocyst was transferred. A single intrauterine pregnancy was then achieved. After 38 weeks of gestation, the patient delivered a healthy female infant by cesarean delivery because of previa placenta.

Discussion

Cervical endometriosis is usually retrospectively diagnosed based on histopathologic reports after cervical biopsy, conization, or hysterectomy.[1] Although a cervical biopsy is indispensable for the accurate diagnosis

From the Reproductive Medicine Center, The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China (Ms Yang, Dr Luo, Dr Zhang, and Dr Chen); Department of Ultrasonic Medicine, The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China (Ms Feng)

T.Y. and J.F. contributed equally to this study.

The authors report no conflict of interest.

This study did not receive any funding.

Patient consent was not required because no personal information or details were included.

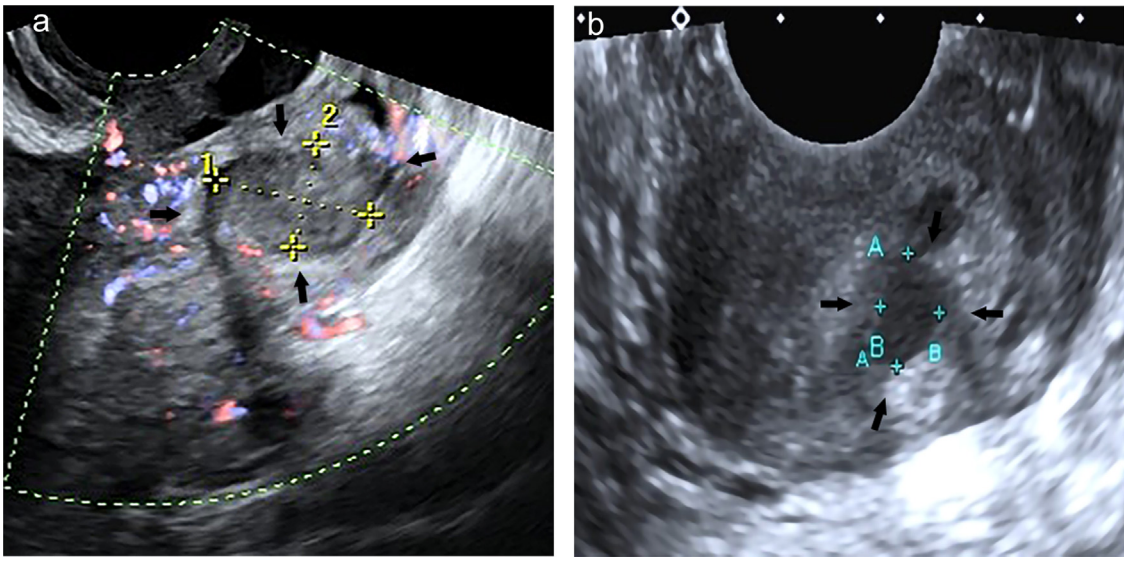
Ethics approval and waiver of informed consent were granted by the ethics committee of the First Affiliated Hospital of Sun Yat-sen University (number ITT-2022-546, date: November 23, 2022).

Corresponding author: Minghui Chen, PhD.
chenmhui@mail.sysu.edu.cn

2666-5778/$36.00

http://dx.doi.org/10.1016/j.xagr.2023.100213

FIGURE
The cervical endometriosis lesion under ultrasound examination



The cervical endometriosis lesion before (a) and after (b) GnRH agonist treatment. The numbers in figure a and the letters A and B in figure b represent the diameter of the cervical endometriosis lesion.

Yang. Gonadotropin-releasing hormone agonist for in vitro fertilization in case of cervical endometriosis. Am J Obstet Gynecol Glob Rep 2023.

of cervical endometriosis, it is technically difficult to obtain suitable confirmatory biopsies in cases of deep cervical endometriosis. TVS is the first-line imaging technique for diagnosing endometriosis and has been recommended for diagnosing and locating endometriosis, whereas MRI is more accurate in staging the extent of lesions, especially for deep pelvic endometriosis.[5–7] In this case, an endometriosis lesion in the posterior cervical lip was invisible and unreachable during speculum examination but was detected using MRI and TVS. More clinical evidence supporting the diagnosis of cervical endometriosis was that vaginal bleeding stopped and the lesion in the posterior cervical lip shrank after estrogen deprivation caused by GnRH agonist treatment, which is consistent with the estrogen-dependent characteristics of endometriosis.

Local excision is the most commonly used method for managing abnormal vaginal bleeding symptoms in cases of cervical endometriosis.[1–3] However, it is a risk factor for cervical insufficiency and could adversely affect pregnancy outcomes in patients with infertility.[8,9] Administration of a GnRH agonist leads to a hypoestrogenic status by suppressing the hypothalamic-pituitary axis, thus depriving the existing endometriotic lesions of their main growth stimulus. The use of GnRH agonists may be beneficial as first-line management to relieve symptoms and avoid surgery, although there are no data available on the effect of these in the treatment of cervical endometriosis.[10] In this case, the administration of a GnRH agonist suppressed the cervical endometriotic lesion, stopped the bleeding caused by the cervical lesion, and enabled oocyte retrieval and embryo transfer.

In summary, noninvasive imaging diagnosis and GnRH agonist treatment in this case of cervical endometriosis with infertility had no adverse effects on pregnancy outcomes and contributed to the successful implementation of assisted reproductive technology. ■

REFERENCES

1. Wong FW, Lim CE, Karia S, Santos L. Cervical endometriosis: case series and review of literature. J Obstet Gynaecol Res 2010;36:916–9.

2. Iwase A, Goto M, Kurotsuchi S, Harata T, Kaseki S, Kikkawa F. Successful management of a massive hemorrhage due to rupture of cystic cervical endometriosis by a loop electrosurgical excision procedure. Fertil Steril 2008;89. 991.e13–5.

3. Wang S, Li XC, Lang JH. Cervical endometriosis: clinical character and management experience in a 27-year span. Am J Obstet Gynecol 2011;205. 452.e1–5.

4. Seval MM, Cavkaytar S, Atak Z, Guresci S. Postcoital bleeding due to cervical endometriosis. BMJ Case Rep 2013;2013:bcr2012008209.

5. Bazot M, Lafont C, Rouzier R, Roseau G, Thomassin-Naggara I, Daraï E. Diagnostic accuracy of physical examination, transvaginal sonography, rectal endoscopic sonography, and magnetic resonance imaging to diagnose deep infiltrating endometriosis. Fertil Steril 2009;92:1825–33.

6. Bazot M, Thomassin I, Hourani R, Cortez A, Darai E. Diagnostic accuracy of transvaginal sonography for deep pelvic endometriosis. Ultrasound Obstet Gynecol 2004;24:180–5.

7. Tong A, VanBuren WM, Chamié L, et al. Recommendations for MRI technique in the evaluation of pelvic endometriosis: consensus statement from the Society of Abdominal Radiology endometriosis disease-focused panel. Abdom Radiol (NY) 2020;45:1569–86.

8. Jin G, LanLan Z, Li C, Dan Z. Pregnancy outcome following loop electrosurgical excision procedure (LEEP) a systematic review and meta-analysis. Arch Gynecol Obstet 2014; 289:85–99.

9. Han Y, Li M, Ma H, Yang H. Cervical insufficiency: a noteworthy disease with controversies. J Perinat Med 2020;48:648–55.

10. Dunselman GA, Vermeulen N, Becker C, et al. ESHRE guideline: management of women with endometriosis. Hum Reprod 2014; 29:400–12.