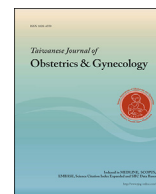




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Case Report

Pregnancy following robot-assisted laparoscopic partial cystectomy and gonadotropin-releasing hormone agonist treatment within three months in an infertile woman with bladder endometriosis

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ABSTRACT

Objective: To report an infertility case of deep-infiltrating bladder endometriosis conceiving following robot-assisted surgery and modified gonadotropin-releasing hormone agonist (GnRHa) treatment.**Case report:** A 33 year-old infertile female presenting with dysmenorrhea was found to have a bladder mass by pelvic ultrasound. Cystoscopy revealed a protruding tumor from the posterior bladder wall, and endometriosis was highly suspected. Robot-assisted laparoscopic partial cystectomy was performed for the deep-infiltrating bladder endometriosis. With postoperative half-dose GnRHa treatment and timed intercourse, she got pregnant within 3 months.**Conclusion:** Robot-assisted complete resection of deep-infiltrating endometriosis and bladder repair immediately followed by GnRHa therapy and medical assistance improves reproductive outcomes efficiently in women with endometriosis-associated infertility.© 2018 Taiwan Association of Obstetrics & Gynecology. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Endometriosis is a benign disease defined as endometrial tissue implanting outside the uterine cavity and often causes dysmenorrhea, pelvic pain, dyspareunia and infertility. The prevalence of endometriosis has been reported in up to 50% of infertile women [1]. Distorted pelvic anatomy secondary to pelvic adhesions and increased inflammation adversely impacting the peritoneal environment contribute to endometriosis-associated infertility [2,3].

Deep-infiltrating endometriosis (DIE) is a complex form of endometriosis which may involve rectovaginal septum, uterovesical fold and bladder. It is believed that DIE has more aggressive behavior and more detrimental effects on fertility in comparison to ovarian endometrioma or superficial peritoneal endometriosis [4]. Both the American Society for Reproductive Medicine and the

European Society of Human Reproduction and Embryology (ESHRE) recommend operative laparoscopy to increase spontaneous pregnancy rate for women with stage III/IV endometriosis [3,5]. However, there is no consensus about the therapeutic strategies of DIE to improve fecundity [5]. Here we report an infertility case of deep-infiltrating bladder endometriosis conceiving efficiently following robot-assisted surgery and modified gonadotropin-releasing hormone agonist (GnRHa) treatment.

Case report

A 33-year-old, gravida 1, para 0, woman with failure to conceive for 5 years presented to our infertility center for counseling. She had regular menstruation and dysmenorrhea without menorrhagia, hematuria or dysuria. The levels of anti-Mullerian hormone, CA-125, CA19-9 and CEA were 2.77 ng/mL, 20.81 U/mL, 37.65 U/mL and 2.05 ng/mL, respectively. Semen analysis excluded male factor-related infertility. Hysterosalpingography showed no occlusion of bilateral fallopian tubes. A 3-cm bladder mass was found by ultrasound (Fig. 1A). Cystoscopy performed by the urologist revealed

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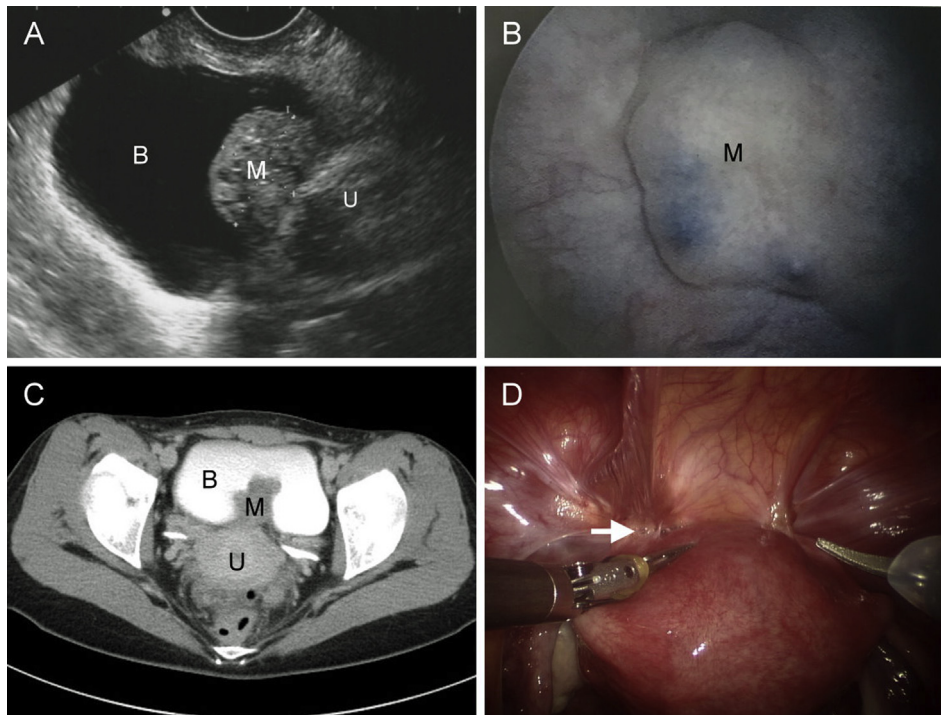


Fig. 1. (A) Transvaginal ultrasound showed a heteroechoic mass lesion (M) in the bladder (B). (B) A bladder mass (M) on the bladder wall was found by cystoscopy. (C) Pelvic computed tomography showed a lobulated tumor (M) in the posterior wall of urinary bladder (B) abutting to the anterior wall of the uterus (U). (D) Laparoscopy revealed extensive deep infiltrating endometriosis with obliterated uterovesical fold (white arrow).

a protruding tumor from the posterior bladder wall (Fig. 1B), and endometriosis was highly suspected. Computed tomography showed a lobulated neoplasm of 3.14×2.6 cm in size in the posterior wall of bladder abutting to the uterus (Fig. 1C). She underwent laparoscopy using the da Vinci® Si Surgical System (Intuitive Surgical, Inc., Sunnyvale, CA, USA), and extensive DIE between the anterior uterine wall and the bladder was found after incision of the obliterated uterovesical fold (Fig. 1D). Following careful dissection and resection of the endometriotic lesion with monopolar cautery spatula and bipolar forceps, the posterior wall of the bladder was exposed, and the protruding tumor was clearly visualized after incision into the bladder. Then partial cystectomy with complete excision of the tumor was performed, and the incision wound was closed with continuous two-layer suturing using a 2-0 absorbable coated polyglactin-910 suture and a 3-0 absorbable unidirectional barbed suture. Bladder distension without leakage was confirmed immediately, and an indwelling urinary catheter was left in place. There were no other visible endometriotic lesions in the pelvis. The operation time was 252 min, and estimated blood loss was less than 100 mL. She recovered well without any complications. Endometriosis with hemorrhagic cysts including the well-differentiated endometrial glands and stroma embedded in the mucosa and muscular layer of the thickened bladder wall was proved by pathological examination. The immunohistochemical staining showed positive CD10, PAX8 and ER. She received postoperative GnRHa treatment with leuprolide acetate depot of 1.875 mg 5 days later, and the urinary catheter was removed 10 days postoperatively with minimal post-void residual urine. The postoperative CA19-9 level was 26.43 U/mL. During the period waiting for wound healing, the second dosage of leuprolide acetate depot (1.875 mg) was injected one month after the first treatment. Medically-assisted timed intercourse followed and resulted in a successful pregnancy within 3 months.

Discussion

A multicentric study found that 21% of patients with DIE were infertile and the mean duration of infertility was 3 years [6]. However, the prevalence of bladder endometriosis in infertile women has not been reported in the literature. To our knowledge, this is the first report of conceiving by medically-assisted timed intercourse on the first attempt following robot-assisted laparoscopic partial cystectomy and half-dose GnRHa treatment in an infertile woman with bladder endometriosis. Robotic surgical system makes laparoscopic resection of bladder endometriosis and bladder repair more delicate and safer. Patients with endometriosis-associated infertility may achieve pregnancy earlier and easier with adjuvant GnRHa treatment and medical assistance immediately after surgical excision of DIE.

One retrospective study demonstrated that dysmenorrhea was the most common complaint in patients with bladder endometrioma and only 40% had urinary symptoms [7]. Because 50% of women with DIE have chronic pelvic pain [8], it is difficult to predict underlying bladder endometriosis if they are asymptomatic or only with dysmenorrhea like our present case. For those with hematuria, dysuria, tenesmus, diarrhea or dyschezia during menstruation, ESHRE recommends that clinicians should assess ureter, bladder and bowel involvement by additional imaging modalities if there is a suspicion of DIE, in preparation for further management [5].

Laparoscopic surgery for the treatment of endometriosis has been proven effective in reducing pain and increasing live birth or ongoing pregnancy rate (OR 1.94, 95% CI 1.20 to 3.16) and clinical pregnancy rate (OR 1.89, 95% CI 1.25 to 2.86) compared with diagnostic laparoscopy [9]. Although conservative surgery with laparoscope was recommended for infertile women with stage III/IV endometriosis without other identifiable infertility factors [3],

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