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Minimally Invasive Approach to Deep Endometriosis with Rectal and Ureteral Involvement

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INTRODUCTION

Deep endometriosis is a severe form of endometriosis characterized by infiltration of endometrial tissue more than 5 mm beneath the peritoneal surface. This condition may involve pelvic structures such as the rectum and ureters, leading to severe cyclic pain and urinary or gastrointestinal symptoms.[1,2] Surgical management of this condition, particularly in cases with rectal and ureteral involvement, requires a precise multidisciplinary approach and meticulous dissection to preserve organ function and minimize morbidity.[3,4] Minimally invasive surgery has become the preferred approach for complex endometriosis because of its enhanced anatomic visualization, reduced postoperative morbidity, and improved recovery. The present video demonstrates a highly complex surgical technique, including rectal mobilization and ureteral reimplantation. This audiovisual material may provide technical and educational value to the colorectal surgical community.

VIDEO DESCRIPTION

A 47-year-old woman with a body mass index of 27 kg/m² and no known drug allergies presented with recurrent cyclic abdominal pain refractory to 3 months of medical therapy. Her surgical history included subtotal hysterectomy for uterine leiomyomata, breast reduction surgery, and previous placement of a right double-J ureteral stent for hydronephrosis secondary to endometriosis. Given the absence of future fertility desires, definitive surgical treatment was indicated.
Standard laparoscopic access was established. Initial exploration revealed bilateral ovarian endometriotic implants and dense adhesions involving the rectum and lateral pelvic walls. Medial dissection of the sigmoid mesocolon and mesorectum was performed using energy devices, followed by mobilization of the ovaries from the anterior surface of the colon and rectum. The left ureter was subsequently identified and dissected free from adhesions to the rectal wall. Left oophorectomy was then completed using combined sharp and energy-based dissection.
Severe endometriotic involvement with extensive fibrosis was identified in the right ureter. The affected ureteral segment was transected, the double-J stent was removed, and the distal ureteral stump was ligated. Urinary tract integrity was confirmed with a hydropneumatic test.
Right oophorectomy was completed, followed by resection of an endometriotic implant located on the cervical stump. Colpotomy and trachelectomy were then performed, followed by closure of the vaginal cuff.
For urinary tract reconstruction, bladder mobilization and laparoscopic ureteroneocystostomy were performed using interrupted Vicryl® sutures over a ureteral stent. The procedure concluded with the placement of a surgical drain in the operative bed.
The postoperative course was uneventful, and the patient was discharged on postoperative day 1 without complications. The urinary catheter was removed 15 days later, and at follow-up, the patient remained asymptomatic and required no analgesic medication.

CONCLUSIONS

Minimally invasive surgery for deep endometriosis with rectal and ureteral involvement is feasible and safe in selected patients when performed by an experienced multidisciplinary team. Precise anatomic identification and meticulous surgical technique are essential to minimize morbidity, preserve organ function, and enhance postoperative recovery.
This case demonstrates the technical feasibility of a laparoscopic approach that combines adhesiolysis, adnexal resection, trachelectomy, and ureteral reimplantation. Satisfactory perioperative and functional outcomes were achieved, even in the setting of severe ureteral involvement.

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FM: conceptualization, methodology, research, data curation, visualization, drafting of the original version. PS: research, supervision, validation. GK: research, supervision, validation. AQ: research, supervision, validation. NA: conceptualization, methodology, research, data curation, visualization, drafting of the original version, revision and editing, supervision, and validation.
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