



CASUISTRY

Umbilical laparoendoscopic partial cystectomy[☆]



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KEYWORDS

Laparentroscopy;
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PALABRAS CLAVE

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Abstract

Objective: To present our center's experience in single-port umbilical laparoendoscopic partial cystectomies, in both benign and malignant pathologies. Patient characteristics, perioperative aspects and the surgical techniques used are reviewed.

Material and method: Since May 2012, five patients have undergone a transumbilical single-port laparoendoscopic partial cystectomy with curved equipment through a reusable multichannel system and a 3.5 mm accessory trocar. Patients were three males and two females aged between 28 and 78 (median: 44 ± 42.5) years. The etiologies were endometriosis (in 2 cases), a tumor in the diverticulum, a congenital bladder diverticulum and ureterocele (1 case of each).

Results: Median surgery time was 273 ± 163.4 min, and intraoperative bleeding 250 ± 175 ml. None of the patients required transfusion. The postoperative period was uneventful, with good results and no complications. The hospital stay was 3 ± 1 days. With monitoring of 20 ± 17.5 months, morphological and functional recovery in the bladder and ureter was confirmed in all cases and the patient with neoplastic disease was disease-free more than 2 years after the surgery.

Conclusions: An umbilical laparoendoscopic partial cystectomy represents a viable surgical option and ensures that excellent surgical and cosmetic results are achieved.

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Cistectomía parcial laparoendoscópica umbilical

Resumen

Objetivo: Presentamos la experiencia de nuestro centro en cistectomía parcial laparoendoscópica por puerto único umbilical, tanto en proceso patológico benigno como maligno. Se revisan las características de los pacientes, los aspectos perioperatorios y la técnica quirúrgica empleada.

Material y método: Desde mayo de 2012 5 pacientes fueron sometidos a cistectomía parcial laparoendoscópica por puerto único (LESS) transumbilical con material curvo a través de sistema

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multicanal reutilizable y un trocar accesorio de 3,5 mm. Tres fueron hombres y 2 mujeres, con edades comprendidas entre 28 y 78 (mediana $44 \pm 42,5$) años. La etiología fue endometriosis (2 casos), tumor en divertículo, divertículo vesical congénito y ureterocele (un caso cada uno, respectivamente).

Resultados: La mediana de tiempo quirúrgico fue $273 \pm 163,4$ min, y el sangrado intraoperatorio 250 ± 175 ml. Ninguno de los pacientes requirió transfusión. El postoperatorio transcurrió sin incidencias, con buena evolución y sin complicación alguna. La estancia hospitalaria fue 3 ± 1 día. Con seguimiento de $20 \pm 17,5$ meses se ha confirmado la recuperación morfológica y funcional de vejiga y uréter en todos los casos, y el paciente con enfermedad neoplásica se encuentra libre de enfermedad más de 2 años después de la cirugía.

Conclusiones: La cistectomía parcial laparoendoscópica umbilical representa una opción quirúrgica viable y segura, que consigue resultados quirúrgicos y cosméticos excelentes.

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Introduction

Laparoendoscopic single site surgery [LESS] arises as a result of constant advance and improvement in the techniques of minimally invasive surgery.¹ Since its first application in urology in 2007² its indications have increased, especially for reconstructive processes in which the esthetic function is crucial.^{3,4}

Partial cystectomy is used for the excision of benign bladder disease processes, not susceptible to removal by transurethral resection. In the case of malignant lesions, this technique has always aroused controversy, but it maintains some indication in the treatment of intradiverticular single bladder tumor or urachal tumor, seeking safe oncologic results and minimizing the functional loss of radical surgery. We present the experience of our center in partial cystectomy using umbilical approach. The characteristics of patients, operative and postoperative results are reviewed, and the surgical technique used is described step by step.

Patients and method

Since May 2012, 5 patients have undergone transumbilical laparoendoscopic single-site partial cystectomy (LESS) in our center. 3 were men and 2 women, aged between 28 and 78 (median 44 ± 42.5) years. In one case the etiology was tumor (solid-papillary neoplasm within a diverticulum) (Fig. 1) and in the rest it was due to benign disease: bladder endometriosis in 2 cases, congenital bladder diverticulum in 1 case, and ureterocele in the remaining case.

In one case the lesion (endometriosis) was retrotrigonal (Fig. 2). In the remaining 4 patients, the lesion was on the left lateral aspect of the bladder, affecting in 2 of them (endometriosis and ureterocele) the ipsilateral ureter, so in these patients ureteral reimplantation was also practiced. In the case with tumor disease, bilateral ureteral catheterization, diverticulectomy with empty bladder and wide safety margin, early bagging of the specimen, and bilateral pelvic lymphadenectomy were performed.

Surgical technique

The patient is placed in supine in 15–30° Trendelenburg position, which is usually enough to keep the bowel away from

the surgical field. A urethral catheter is inserted which will serve to fill the bladder during surgery. Through an umbilical incision of 2.5 cm, the peritoneum is accessed and single-site multichannel platform KeyPort (Richard Wolf, Knittingen, Germany) is placed. In all cases a 3.5 mm accessory port is also placed in the right iliac fossa to facilitate the procedure and insert minilaparoscopy instruments. This small hole also serves to leave the peritoneal drainage after the procedure (Fig. 3).

We proceed to develop the space of Retzius, after incising on both sides the lateral peritoneum to umbilical ligaments and dissecting preperitoneal fat of the rectus abdominis muscles. This plan continues into the pelvis and extends to the side areas of the bladder. The "marionette"-like use of stitches with straight needle removed out of the abdomen to exert traction of the uterus, the sigma, or even the bladder can be very useful (Appendix A, Supplementary material). In the case of malignancy, the bladder remains empty to minimize the risk of intraperitoneal dissemination if inadvertent cystotomy is practiced.

Fig. 4 shows the main steps of the surgery. The mobilization of the side walls of the bladder is critical for the closure without tension thereof. We should also take into account correct identification of the ureters, since the holes can be found next to the margins of resection. In these cases, practice at the beginning of surgery of ureteral catheterization is very useful. If the ureteral orifice is part of the affected tissue, ureteral reimplantation is required, which can also be performed by LESS approach, technique specifically described also by our group in another work.³ When there is intradiverticular urothelial neoplasia, extended pelvic lymphadenectomy is also required.

Results

The median operative time was 273 ± 163.4 min and estimated operative bleeding 250 ± 175 ml. No patients required transfusion. The postoperative course was uneventful. There were no complications in any patient, either major or minor (according to the Clavien-Dindo classification). The median hospital stay was 3 ± 1 day. In all cases, peritoneal drainage was placed, removed on the 2nd postoperative day and bladder catheter removed 7–15 days after surgery. In 4 of the 5 patients, double J catheter of the operated side

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