

Retroperitoneoscopic ureterocutaneostomy as a method of urinary diversion in case of complicated urinary fistula after radiotherapy

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KEY WORDS

urinary fistula ► cervical cancer ►
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ABSTRACT

The case of 71-year-old woman with massive vesico-vaginal and recto-vaginal fistula after radiotherapy treated with bilateral laparoscopic ureterocutaneostomy is presented. A retroperitoneoscopic access was applied. The technical aspects of the procedure are described. The interdisciplinary character of this not so rare problem is underlined. In our opinion this kind of procedure may be considered as a valuable alternative for commonly used methods of urine deviation.

INTRODUCTION

The first laparoscopic ureteral procedure using a retroperitoneal approach was described by Wickham in 1979 [1]. Gaur's idea to use a balloon to create the working space in the retroperitoneal space has popularized the method of retroperitoneoscopy [2]. We use it as a method of choice in the treatment of upper urinary tract disorders [3].

The treatment of complicated urinary and fecal fistulas remains a serious interdisciplinary problem. The complication rate after radiotherapy due to cervical cancer differs according to stage of the disease and the applied dose of radiation [4, 5]. Urologists usually have to deal with the most challenging problem of urine derivation or fistula repair. Radiated fistulas usually require an individualized management and complex surgical procedures. The transvaginal or transperitoneal fistulorrhaphy, bilateral nephrostomy, ileal conduit, ureterocutaneostomy or ureterostomy *in situ* are the options to be considered in these cases. The vesico-vaginal fistulas have been also often related to simultaneous recto-vaginal fistulas, which make successful treatment much more difficult or simply impossible in terms of radicality. The patients must wait for at least minimal improvement in their quality of life, which is highly impaired with this condition.

We present the case of retroperitoneoscopic bilateral ureterocutaneostomy that was performed in case of complicated urinary fistula after radiotherapy.

Case description

A 71-year-old woman was admitted to the department of urology because of massive vesico-vaginal and recto-vaginal fistula. In 2002 she underwent radiotherapy for an intracervical form of planoepithelial cancer, stage IIb. Four-fields "box" technique X-10

MeV external-beam radiotherapy with total dose 54 Gy/T, and the afterloading Cs-137 LDR-brachytherapy to the uterine canal and vagina fornixes were used. The dose in point A was specified 50 at Gy in 2 fractions. No complications during therapy were observed. In November 2009 she developed symptoms of recto-vaginal fistula, which was treated with permanent colostomy. A year later she noticed the urinary leakage from the vagina and the massive vesical fistula was diagnosed. In rectal and vaginal examination the infiltration of pelvic organs as well as the walls was palpable, however the cytology examination revealed only inflammatory changes. In ultrasound examination no dilatation of collecting systems was visible. She suffered very much from the extremely uncomfortable local situation, including hygienic problems, bad odor and perineal irritation caused by urine and purulent discharge.

She agreed for bilateral retroperitoneoscopic ureterocutaneostomy that was offered to her. In general anesthesia she was placed in left flank position. The retroperitoneal approach with three trocars was created according to the technique that was described previously (Figs. 1 and 2) [3]. The ureter was found and dissected about 6-8 cm below the lower pole of the kidney, then clipped on the distal end and cut. It was implanted into the skin with single sutures in the place where the trocar with camera was previously located then catheterized and secured with urine bags (Fig. 3). The procedure was repeated on the opposite site after changing position of the patient. The local anesthesia was applied to trocar sites after removal of instruments according to our anti-pain policy. No drains were left. The procedures were accomplished without any intraoperative complications. The total operation time was 40 minutes and no blood loss was noticed. Patient was discharged from the hospital on the next day, being completely dry. Three months after operation she is satisfied with the result and confirms that she would choose the same method again.

DISCUSSION

The risk of developing vesicovaginal fistula is about 1% after surgery or radiotherapy for gynecologic malignancies [6]. The formation of post-irradiation fistula is caused by hypovascularization and massive fibrosis of the tissues; these factors also highly impair the healing process after surgical repair [5, 6, 7]. There are only few publications regarding laparoscopic ureterocutaneostomy [8-10]. This method has been used in patients with advanced pelvic organs (e.g. prostate, bladder, uterus) causing obstructive uropathy [8, 9]. It is generally considered as a simple, minimally invasive method. In the described patient we did not perform bilateral nephrostomies because of non-dilated collecting systems and the possible risk of some residual flow from the kidneys down to the bladder. We also excluded the ileal conduit as a method of treatment because of the high risk of complications when performed on previously radiated intestines. Some of authors consider ureterohydronephrosis as an indication for laparoscopic ureterocutaneostomy [8, 9]. We applied



Fig. 1. Arrangement of trocars – left side.



Fig. 2. Trocars placement (2 x 10 mm, 1 x 5 mm) – left side.



Fig. 3. Localization of urostomies.

it successfully in a non-obstructed patient, in whom in our opinion it seemed to be a reasonable alternative to other methods of urine derivation. Although according to some authors [10] retroperitoneal access offers less working space, worse vision, and lack of anatomical landmarks, based on large experience in this field (more than 500 procedures performed), we use it as a method of choice in the treatment of benign and malignant conditions of the upper urinary tract including some rare indications as in the presented case. In our opinion retroperitoneoscopic access is fast and easy to perform while limiting the chance of injury or irritation to the intraperitoneal organs, especially when the risk of urinary leakage can be expected.

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