

Urethral Carcinoma Recurrence in Ileal Orthotopic Neobladder: Urethrectomy and Conversion in a Continent Pouch with Abdominal Stoma

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Key Words

Bladder carcinoma · Ileal neobladder · Urethral carcinoma recurrence

Abstract

A patient who had previously undergone ileal neobladder with Studer technique presented an urethral recurrence of a transitional cell carcinoma. Further surgical treatment consisted of urethrectomy and creation of an intussuscepted ileal loop which was anastomosed to the pouch and provided a continence mechanism allowing self-catheterization.

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Introduction

Orthotopic ileal neobladder represents one of the major achievements of urologic surgery during the last decade, and an increasing number of bladder carcinoma patients undergo this form of reconstruction. There are numerous technical variants in the creation of an orthotopic ileal neobladder, and among them the Studer procedure is one of the most popular, as it demonstrates a low

incidence of complications such as nighttime incontinence, high postvoid volume, urinary infections, lithiasis, or long-term augmentation of reservoir capacity [1]. Urethral carcinoma recurrences are reported in about 5% of the patients treated with orthotopic urinary diversion and are often due to an inadequate preoperative evaluation of disease and localization of bladder carcinoma at the bladder neck [2].

Case Report

A 68-year-old male patient, who originally presented a T₂N₀M₀ (G2) bladder tumor and underwent 12 months earlier orthotopic ileal neobladder diversion according to Studer, was admitted to our institution with hematuria.

A cystourethrogram showed an urethral lesion (fig. 1a). Computed tomography and magnetic resonance imaging confirmed the presence of a solid lesion measuring about 3 × 2 cm, infiltrating the corpus spongiosum (fig. 1b). A biopsy specimen demonstrated urethral recurrence of a transitional cell carcinoma. The surgical approach consisted of a first perineal phase and a second abdominal phase.

The *perineal phase* consisted of urethrectomy and closure of the ileal neobladder. With the patient in the lithotomy position, an inverted 'Y' incision and bulbourethral muscle dissection were performed; then the urethra was completely dissected and resected at the anastomosis level. The ileal neobladder neck was closed with Dexon

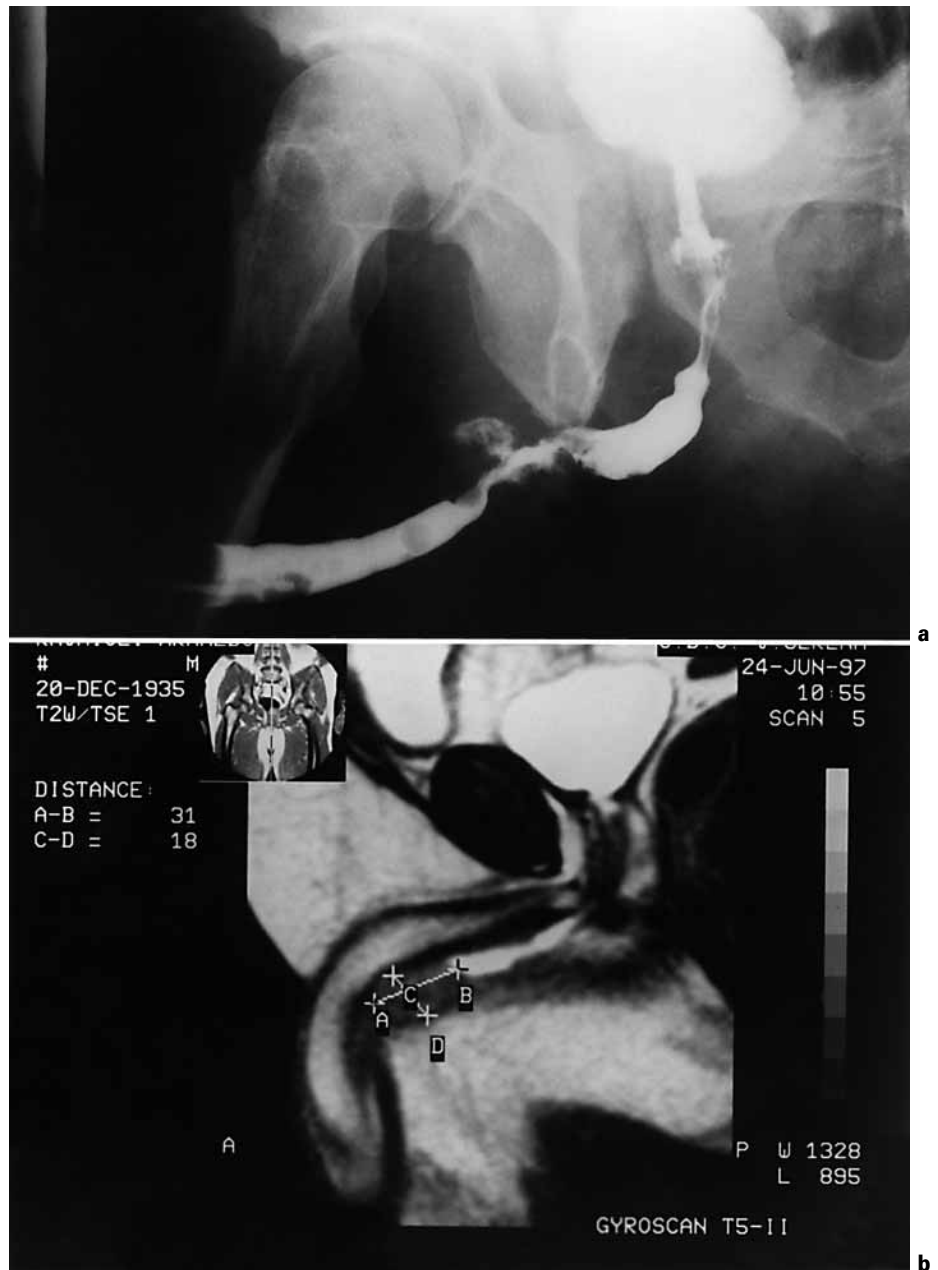


Fig. 1. a Retrograde urethrogram. **b** Pelvic magnetic resonance imaging, sagittal view, demonstrating recurrence of an urethral bladder carcinoma in a patient with orthotopic ileal ladder.

plus O, and the corpora cavernosa were reapproximated. After accurate hemostasis two Redon drains were positioned.

The *abdominal phase* with the patient in the supine position, consisted of midline incision and complete anterior ileal neobladder dissection; then the peritoneal cavity was opened and another 20-cm ileal loop was isolated. An end-to-end anastomosis was performed to restore intestinal continuity. The isolated loop was invaginated for about 10 cm with the mucosa outside, then stabilized with staples using TIA 55 and prepared for implant (fig. 2a). The ileal neobladder was opened, and the nipple was sutured inside the reservoir with 2-0 Monocryl in order to guarantee continence. The distal tract of the

loop was anastomosed to the abdominal wall in the lower right quadrant. A 22-Charr Foley catheter was positioned through the nipple valve in the ileal neobladder. Fifteen days after surgery, the patient was able to perform self-catheterization. A sufficient valve-closing pressure at maximum filling was demonstrated by postoperative cystourethrogram (fig. 2b).

The patient underwent three cycles of platinum-based chemotherapy and has been followed for 1 year with good function of the neobladder on regular self-catheterization. No dilation of the upper urinary tract has been documented with sonography.

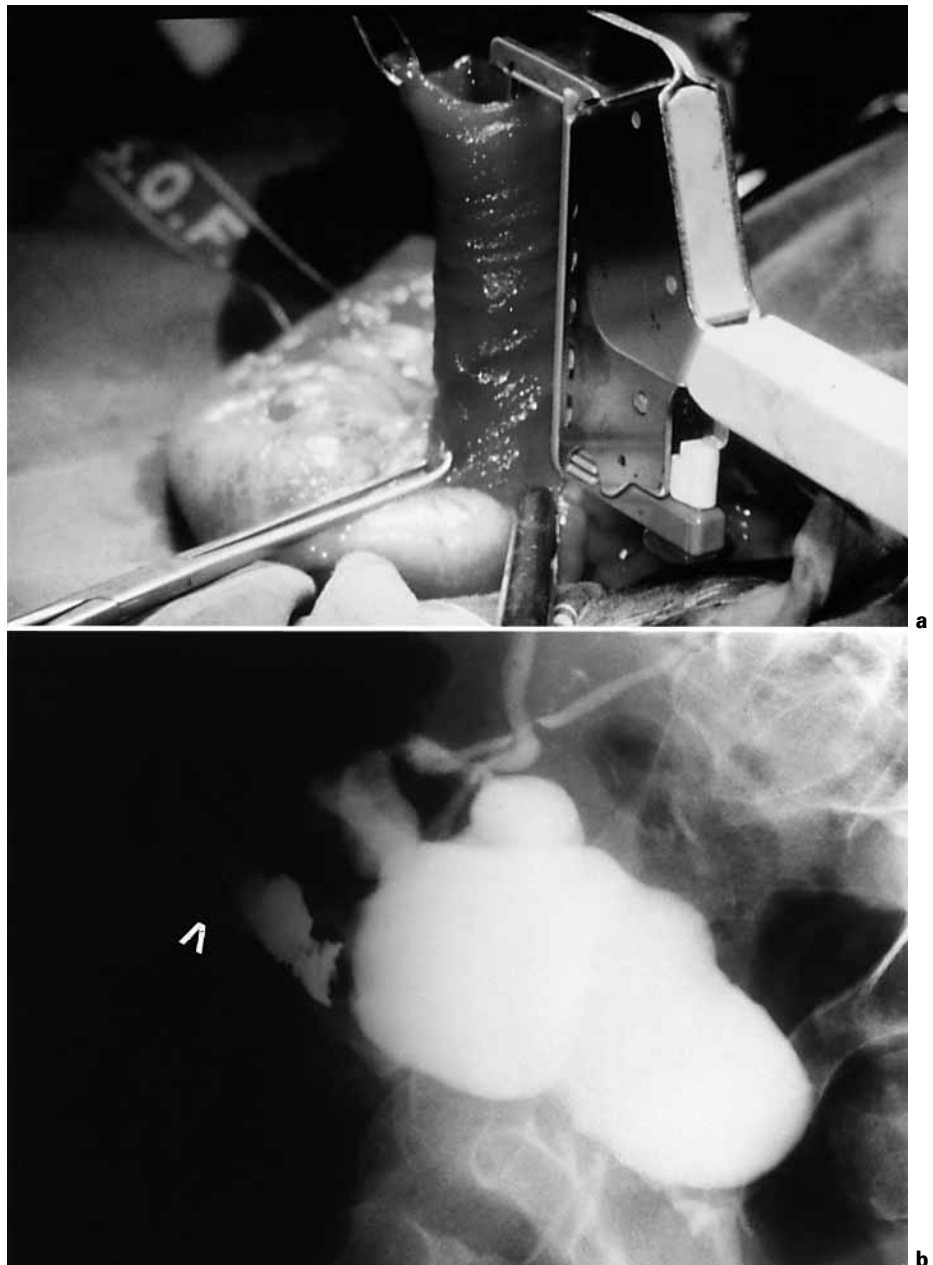


Fig. 2. a Intraoperative photograph showing intussusception with TIA 55 stapler of an ileal loop which was sutured to the anterior aspect of the neobladder in order to provide a continent stoma. **b** Postoperative cystography showing catheterization through abdominal stoma (arrowhead).

Discussion

Urinary diversion with the creation of an intestinal pouch with a continent abdominal stoma antedates the creation of a detubularized orthotopic neobladder [3]. The continence mechanism is usually provided by intussusception of the ileum [4], intussusception of the ileocecal valve, or application of the Mitrofanoff principle [3, 5]. Intussusception of an ileal loop with the serosal sur-

faces outside has also been proposed for the creation of a continent abdominal stoma [6].

A clinical comparison between valve mechanisms placed inside and outside the pouch showed a similar overall risk of late surgical complications and similar intravalve closing pressures [7]. However, with increasing pouch volumes, only intraluminal valves showed a significant increase in closing pressure, resulting in a more efficient volume-dependent continence mechanism.

For this reason, in the present case we decided to create a continent urinary stoma using an intraluminal intussuscepted ileal segment, in order to preserve a relatively good quality of life.

In patients with urethral recurrence of a bladder tumor after the creation of an ileal neobladder, the pouch function can be preserved by adding an intussuscepted ileal loop anastomosed to the abdominal wall as a continence mechanism, allowing self-catheterization.

By this procedure an orthotopic reservoir with a certain leaking point at a given pressure is transformed into a

completely continent form of diversion without theoretically any leaking point. Therefore, it is important to prevent a high intrareservoir pressure by regular self-catheterization in order to avoid kidney damage. In fact, the Studer ileal neobladder relies on the peristaltic activity of an afferent loop to prevent reflux, and while this antireflux mechanism has proven to be effective with an urethral diversion [1], it is still unknown whether it would be sufficient in a completely closed system.

References

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