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CASE REPORT

An Uncommon Complication of Ileocystoplasty for Bladder Tuberculosis

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These days, genitourinary tuberculosis (GUTB) rarely occurs in conjunction with pulmonary tuberculosis. Reconstructive surgery for GUTB has also decreased but may still be done in case of a grossly distorted genitourinary anatomy and dysfunction that are unlikely to regress with chemotherapy alone. Reconstructive bladder surgery for GUTB is a well-established procedure. The various complications associated with the reconstructive surgery have also been well documented. We present a case of an uncommon complication after ileocystoplasty.

Keywords: Urinary diversion; Complications; Urogenital tuberculosis

INTRODUCTION

Tuberculosis has been a major public health problem, especially in developing nations [1]. In Korea, the occurrence of tuberculosis is much reduced during past 10–20 years. Also, genitourinary tuberculosis (GUTB) appears to be the lowest one [2,3]. Although GUTB can be treated well with anti-tuberculosis therapy, the diagnosis is often delayed. In such cases, the patients can already present with an anatomically and functionally damaged organ and the urologist is faced with the dual challenge of eradicating the infection and reconstruction of the distorted anatomy. Various surgical methods for the alleviating a contracted bladder due to tuberculosis have been introduced, and various complications have been reported subsequently. We report a case of an uncommon complication of ileocystoplasty which was mistaken for a peritoneal cystic mass.

CASE REPORT

A 50-year-old man visited Soonchunhyang University Cheonan Hospital with a palpable abdominal mass of 3 years duration. Twenty years ago, a left renal tuberculosis and a contracted bladder was diagnosed at our clinic for which he received anti-tuberculosis therapy (isoniazid, rifampicin, and pyrazinamide). On radiologic studies, the left ureter was severely dilated to the ureterovesical junction and the severe hydronephrosis was also noted. He was also diagnosed with Klinefelter syndrome after a chromosomal study. He later underwent ileocystoplasty for the contracted bladder. During the 5 years after surgery, he had no problem with voiding and eventually was lost to follow-up.

At the current visit, he complained of abdominal discomfort. The physical examination revealed a palpable soft mass over the left abdomen without flank tenderness. The urinalysis showed pyuria. Other laboratory studies, including complete blood count, blood chemistries, and urine culture, were within normal limits. The computed tomography scan revealed a huge cystic mass, measuring about 32 cm in length, occupying the upper abdominal cavity and extended down to the pelvic cavity (Fig. 1). The connection between the mass and the bladder was also evident but the contrast dye accumulated in the bladder at the delayed phase. Left renal cortical thinning was also noted with a calcific density in the left renal pelvis. All the tumor makers were also within normal limits.

Before the surgery, a cystoscopy was done and revealed that the ileum assuming area was dilated. At surgery, the cystic mass was related to the bladder, and the lesion looked like a bowel segment

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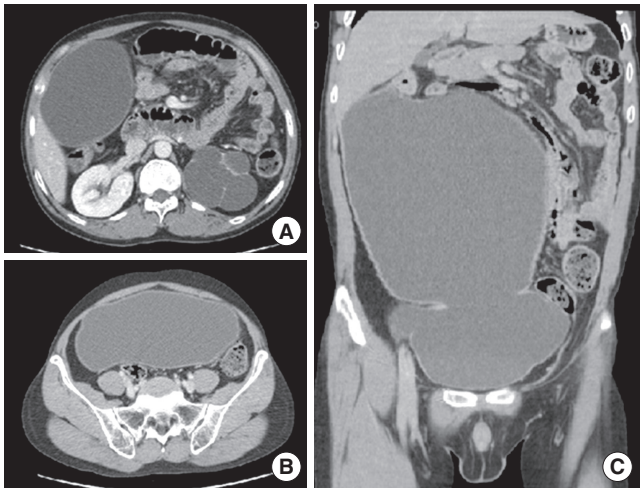

Fig. 1. (A-C) A computed tomography scan shows a huge cystic mass occupying the upper abdomen and down to the pelvic cavity. The mass is connected to the bladder.

because the mesentery was connected to the cystic mass. We presumed that the ileal segment used for the ileocystoplasty was dilated due to incomplete bladder emptying and decided to resect the dilated ileal segment. The native bladder was also mildly dilated. Urine like fluid (10,000 mL) was drained from the cystic mass (Fig. 2). After resecting the dilated ileal segment, the residual native bladder was closed in layers.

A cystography done 7 days after surgery found no urinary leakage. Foley catheter was removed then, he could urinate well. The post voiding residual urine was minimal (< 30 mL).

DISCUSSION

Tuberculosis can involve any organ in the body. The genitourinary tract is also commonly involved, but nowadays the incidence of GUTB has dramatically decreased with proper diagnosis and treatment. The kidney is usually the primary organ affected in the urinary system, and other parts of the urinary tract may be secondarily involved. The most common presenting symptoms in patients with GUTB are irritation when voiding in 60% and hematuria in 50% cases [4]. Vagueness of onset and difficulty in making a right diagnosis may lead to a delay in treatment. This may result in serious complications such as destruction of the kidney or a severely contracted bladder [5].

The role of surgery is complementary to antitubercular chemotherapy. A minimum of 4 weeks of antitubercular chemotherapy is recommended before the surgical intervention [6]. The recommended management protocol was applied to this case. This period allows for stabilization of the lesion and proper surgical planning. In patients with compromised renal function due to tuberculosis, this period also allows for the recovery of the renal function.

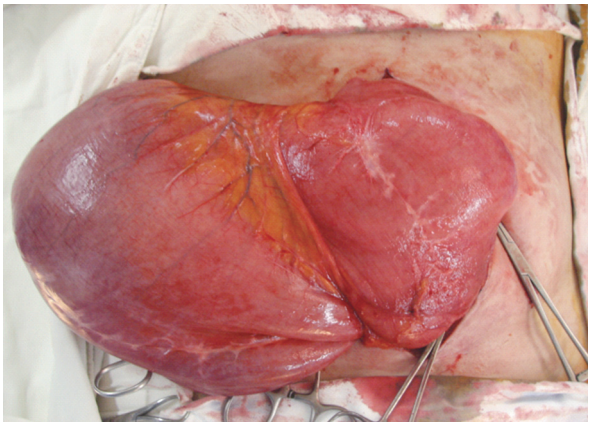

Fig. 2. The mass is retracted from the body. The mesenteric border of the bowel segment is observed. Puncturing the mass revealed 10,000 mL of urine like fluid.

Augmentation cystoplasty is used to correct a small-capacity and low compliance bladder which results in better urinary continence and to prevent upper tract deterioration. The ileum is the commonly used organ for augmentation cystoplasty. It provides an excellent pouch to enlarge the bladder capacity when half of the bladder is to be resected [7]. Excellent results have also been obtained using the above technique to correct a severely contracted bladder due to tuberculosis. But prolonged contact of the enteric mucosa with urine leads to various complications [7].

The complications can be divided into two main categories. The fist is metabolic and histological complications. This category includes electrolyte and acid-base alterations, malignant histological alterations of the native bladder, and the gastrointestinal segment used for the augmentation. The second category is non-metabolic (mainly surgical) complications, including bowel obstruction, stone formation in the neobladder, perforation of the reservoir, vesico-urethral fistula, vesico-ureteral reflux, stoma complications, hematuria-dysuria syndrome, and re-augmentation [7]. We believe this is the first reported case of an augmented bladder distended with 10,000 mL of urine.

Chronic over-distention of the bladder has been suggested as a reason for spontaneous bladder perforation [8]. In this case, the palpable mass lesion has been there for 3 years, and the resected ileum was normal, albeit markedly distended. The intravenous py-

elography showed no hydronephrosis, which means intravesical pressure is not very high, making bladder perforation.

The reason for the bladder distention is not completely understood. The possible causes are bladder outlet obstruction due to age and bladder neck stricture due to tuberculosis. The patient got the operation when he was 30 years old and did not complaint of any voiding problems since. A slow and gradual obstruction of the bladder neck could lead to a large dilated bladder. Another possible reason is that the increased bladder pressure may have caused a weak point on the ileum to balloon out and enlarged. Around 50% of the bladder was removed during the first operation done several years ago and the residual bladder muscle may still generate a high pressure.

His voiding pattern was not investigated prior to the final management because he did not complain of any voiding problems. A uroflowmetry or a urodynamic study was not done and this could be a pitfall in this case.

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