A rare entity in adults: Bilateral Hutch diverticulum with calculi

Onur Telli, MD; Adil Gucal Guclu, MD; Perviz Haciyev, MD; Berk Burgu, MD; Cagatay Gogus, MD

Ankara University, School of Medicine, Department of Urology, Ankara, Turkey

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Abstract

Congenital bladder diverticulum (CBD) is a very uncommon entity in adults. CBD could be unilateral or bilateral and is caused by a congenital weakness in the bladder musculature. CBD is differentiated from the paraureteral or Hutch type of diverticula. A 42-year-old male presented with bilateral Hutch diverticulum and multiple diverticulum calculus on intravenous pyelography. Cystoscopy revealed bladder diverticulum just medial to the left ureteral orifice with multiple calculi; the patient successfully underwent endoscopic laser cystolithotripsy with resolution of his urinary tract infection. To the best of our knowledge, this is the first case report presenting stone formation of CBD in an adult.

Introduction

Bladder diverticulum is related to herniation through a weakness of the bladder muscular wall.[1] The great majority of bladder diverticulum is located at or near the ureterovesical junction in patients who are otherwise healthy.[2] They are classified as congenital, acquired, or iatrogenic.[3] CBDs are associated with a variety of genitourinary complications, such as infections and voiding dysfunction.[4] We report a very rare entity of bilateral congenital bladder diverticulum with calculi resulting from lower urinary tract symptoms (LUTS).

Case report

We present a case of a 42-year-old man suffering with LUTS with dysfunctional voiding. He had a mild right renal colic pain, difficulty in micturition, and frequent urinary tract infections (UTIs). His symptoms had worsened within last 2 months and he was then admitted to our clinic. After normal physical examination, urinalysis and urine culture tests were performed with routine complete blood count, creatinine, blood urea nitrogen (BUN), and prostate-specific antigen (PSA) measurements. Urinalysis showed severe UTI with nitrite positive and he had leukocytosis, and normal creatinine, BUN and PSA levels. Ceftriaxone 1 g intravenous (IV) daily started and was switched to meropenem 3 × 1 g IV daily when the urine culture showed extended spectrum beta-lactamase (ESBL) Escherichia coli growth. A plain abdominal radiography showed radiopaque stones in the bilateral diverticulum (Fig. 1, part A). He underwent an ultrasound examination of the urinary system, which revealed bilateral grade I and II hydronephrosis with bilateral ureteral dilatation and bilateral bladder diverticulum with 7 × 7 cm at left inferior portion of the bladder and 1 × 2 cm at the right inferior portion with bladder calculi. Via ultrasound, the prostate measured 44 cc. An IV pyelography was performed to inspect the urinary tract. It revealed normal nephrogram and pyelogram phases, bilateral ureteral and renal dilatation with the bilateral bladder diverticulum and bladder stones in diverticulum (Fig. 1, part B). When the patient had a negative urine culture with antibiotics, the endoscopy was performed. Cystoscopy evaluation revealed a bilateral diverticulum near ureterovesical junction (Hutch diverticulum) and multiple calculi in the diverticulum (Fig. 1, part C). Cystolithotripsy for bladder calculi and non-surgical intervention for diverticulum was performed and patient's symptoms completely abated. At the 6-month follow-up visit, the patient had no abnormal LUTS and his urinary ultrasound was normal.

Discussion

Hutch diverticulum is a rare entity thought to be a congenital failure of normal muscle development around the ureteral orifice where Waldeyers heath anatomically covers the space between the intravesical ureter and muscular layer of bladder.[5] This diverticulum is usually solitary, occurs mostly in males, is located posteriorly and laterally to the ureteral orifice. A small amount of mucosa initially herniates through a congenital defect in the bladder musculature. Then the defect enlarges with voiding and finally the ureteral orifice is incorporated into

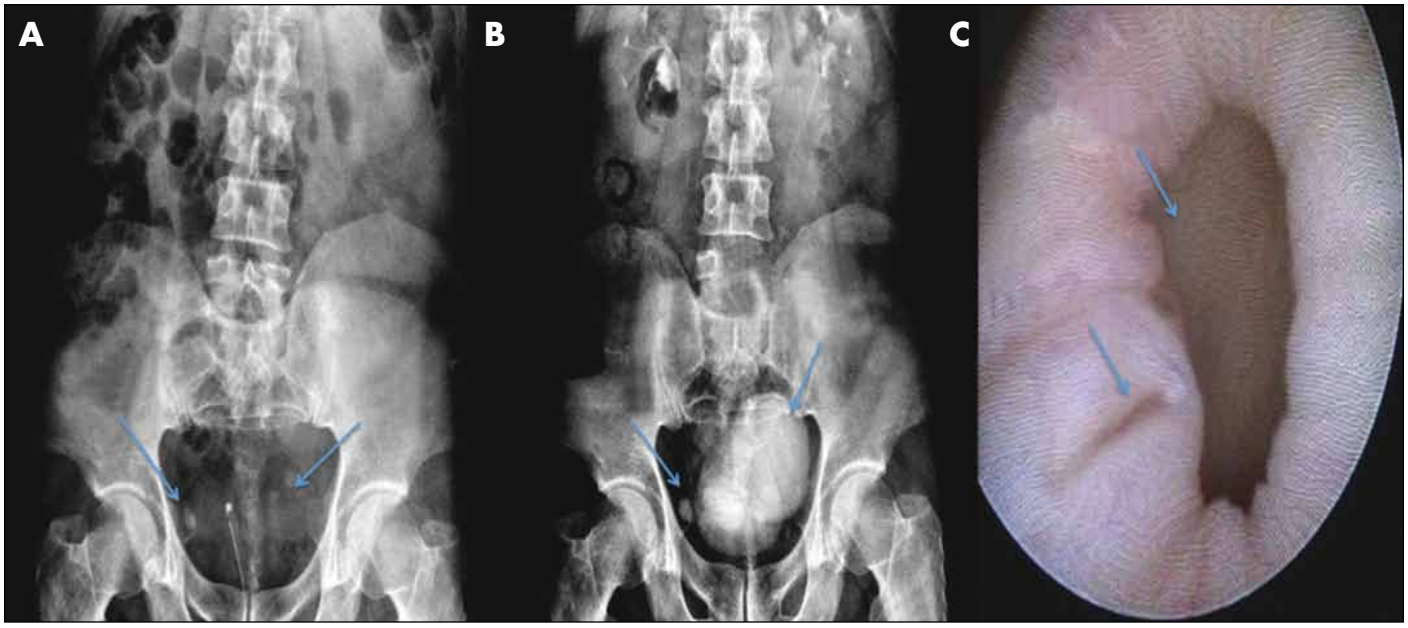

Fig. 1. A: Plain abdominal radiography showing radiopaque stones in the bladder (arrows). B: Intravenous pyelogram revealing bilateral bladder diverticulum with 7 × 7 cm at left inferior and 1 × 2 cm at right inferior portion (arrows). C: Endoscopic view of ureterovesical junction bladder diverticulum (arrows).

the diverticulum.[6] There are very few reported cases and most of them are in children. Adult cases are rare.[7-8]

Patients with Hutch diverticulum can be asymptomatic or may have diverse symptoms due to obstruction or voiding dysfunction, urinary retention inside the diverticulum (urinary infections) or stone formation (as in the case we present here).[9] A review of the adult literature on Hutch diverticulum suggests that both conservative and surgical reconstruction depends on the symptoms and complications of the diverticulum. Indications for surgery are typically large diverticula with complications of incomplete emptying, including recurrent stone formation (5%–16%), recurrent UTIs (13%–73%), spontaneous rupture, and vesico-ureteral reflux mostly with children.[9-11]

In our case we decided on conservative management and followed up with our patient after endoscopic removal of the stone in the diverticulum and the opening of the diverticulum neck. At follow-up, the patient did not have LUTS, recurrent UTIs, or stone formation.

Conclusion

We report a very rare entity of bilateral CBD with calculi resulting from LUTS. CBDs are associated with a variety of genitourinary complications, such as infections and voiding dysfunction, which are the most frequent presentation forms. Most CBD are small and asymptomatic; they are managed conservatively with follow-up, although larger diverticula may present with significant urological symptoms and open or endoscopic diverticulectomy is recommended.

Competing interests: The authors declare no competing financial or personal interests.

This paper has been peer-reviewed.

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Correspondence: Dr. Onur Telli, Ankara University School of Medicine, Department of Urology, Sihhiye/Ankara, Turkey; onurtelli@yahoo.com