

# ACUTE RENAL FAILURE DUE TO THE GIANT BLADDER DIVERTICULUM IN A PATIENT WITH BENIGN PROSTAT HYPERPLASIA

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*Diverticula of the bladder are herniations of the bladder mucosa between fibres of the detrusor muscle. Bladder diverticula may be congenital or acquired. Smaller bladder diverticula are often considered insignificant, although they may cause several complications such as stone formation, unresolved urinary tract infection etc. We report an unusual complication secondary to a large bladder diverticulum.*

**Key words:** Bladder diverticulum, acute renal failure, pop-off mechanism, upper urinary tract obstruction

## **Benign Prostat Hiperplazili Bir Hastada Dev Mesane Divertilüne Bağlı Gelişen Akut Renal Yetmezlik**

*Mesane divertikülleri detrusor kas lifleri arasından mesane mukozasının herniasyonu sonrasında meydana gelir. Mesane divertikülü konjenital veya akkiz olarak meydana gelir. Küçük mesane divertikülleri sıklıkla önemsiz olarak kabul edilirse de taş oluşumu, tedaviye dirençli üriner enfeksiyon gibi komplikasyonlara neden olabilir. Bu vaka takdiminde dev mesane divertikülüne bağlı gelişen nadir bir komplikasyon bildirilmiştir.*

**Anahtar kelimeler:** Mesane divertikülü, akut renal yetmezlik, pop-off mekanizma, üst üriner trakt obstrüksiyonu

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## CASE

U.C, a 62-year-old man was hospitalized with acute renal failure secondary to urinary retention. He had several voiding complaints consistent with prostatic obstruction for the last 10 years. On physical exam, there was general prostration due to the acute moderate renal failure, and abnormal abdominal puffiness in all quadrants of the abdomen. We performed an abdominal ultrasound which revealed a large fluid filled cavity consistent with a distended bladder, severe left ureterohydronephrosis, right

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hydronephrosis with cortical atrophy. There was complete obstruction in the right kidney secondary to a pelvic stone. He was initially treated by transurethral catheterization, which collected a large residual urine volume about 4.5 L. Because such a large volume was collected we suspected that the patient might have a bladder diverticulum. Retrograde cystography revealed a giant diverticulum at the left posterolateral side of bladder but no reflux to any renal units (Figure 1). Catheterization was continued for 8 weeks. At the end of this period, we evaluated renal function by dynamic and static renal scintigraphy. We noted right renal cortical atrophy with minimal function. At that time, creatinine clearance was measured as 67.22 mL/min. Intravenous pyelography showed left severe upper tract dilatation (Figure 2). Open bladder diverticulectomy and transvesical prostatectomy were performed. The bladder neck was very narrow. The mouth of the diverticulum was located at the left posterolateral wall superior to the left ureteral orifice. The diverticulum compressed the distal left ureter. Convalescence was uneventful and the patient subsequently voided easily with complete bladder emptying.

#### COMMENT

Most bladder diverticula are acquired and asymptomatic, therefore, require no treatment. However, prophylactic diverticulectomy may be advocated because of its severe potential complications such as stone formation, infection, ureteral obstruction or spontaneous rupture.<sup>1</sup> In our case, due to the large size of diverticulum, there was an obstruction at the left ureter, which caused renal failure because of the concurrent atrophic right renal unit secondary to an obstructing stone. Acute renal failure due to the bladder diverticula has been reported patients with congenital bilateral paraureteric diverticula by some authors.<sup>2</sup> Our patient had voiding complaints consistent with prostatic obstruction for the last 10 years. The bladder diverticulum probably developed as a pop-off mechanism secondary to the infra-vesical obstruction. Patients with posterior



**Figure 1.** Retrograde cystourethrogram. s: right pelvic stone. d: bladder diverticulum. b: bladder with shadow of Foley indwelling catheter.



**Figure 2.** Intravenous pyelography. It shows severe left ureterohydronephrosis and right hydronephrosis with functional deterioration.

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urethral valves and large congenital type bladder diverticulum have been reported.<sup>3</sup> It is possible that this diverticulum prevented the development of bilateral vesicouretral reflux. However, when the diverticulum reached such a large size, it obstructed the left distal ureter. This case demonstrates the unusual presentation of a large bladder diverticulum.

## REFERENCES

1. Gepi-Attee S, Feneley RCL. Bladder diverticulectomy revisited: Case reports of retention of urine caused by diverticula and discussion. *J Urol* 1994; 152 : 954-5.
2. Khan MS, Uwechue EJ, O'brein A. Acute renal failure due to bladder diverticula. *Br J Urol* 1994; 73: 466-7.
3. Rittenberg MH, Hulbert WC, Snyder HM, Duckett JW. Protective factors in posterior urethral valves. *J Urol* 1988, 140:993-6.