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Unusual Presentation of a Low Abdominal Mass, Urinary Retention, Severe Anemia and Acute Renal Failure Due to Congenital Giant Bladder Diverticulum

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Abstract：We report a 51–year–old man with congenital bladder diverticulum presenting with a low abdominal mass, urinary retention, severe anemia and acute renal failure without lower urinary tract obstruction. Congenital bladder diverticulum causing acute post renal failure is rare, and to our knowledge only three such cases have been reported in the English literature.

Key words：**Bladder, Diverticulum, Renal Failure, Anemia**

Introduction

Bladder diverticula are categorized as congenital or acquired；most are acquired, and tend to be caused by an obstructive lesion of the lower urinary tract, and are most often found in older men. Congenital bladder diverticulum causing acute post renal failure is rare, and to our knowledge only three cases have been reported.[1)–3)] We report a 51–year–old man with congenital bladder diverticulum presenting with a low abdominal mass, urinary retention, severe anemia and acute renal failure without lower urinary tract obstruction.

Case Report

A 51–year–old man presented with a 3–month history of difficulty in urination and a 2– month history of low abdominal distention, difficult voiding and gross hematuria. He visited the Asakura Kensei Hospital for urinary retention and low abdominal distention. A digital rectal examination showed the prostate to be of normal size. Laboratory results were significant for anemia (hemoglobin (Hb) 7.6 g/dl, normal 13.4 to 17.6) and an increase creatinine level of 12.78 mg/dl (normal 0.6 to 1.1), and blood urea nitrogen (BUN) level of 146.6 (normal 8 to 22). An ultrasound scan showed bilateral hydronephrosis and a cystic mass in the pelvis. He was referred to Chikushi Hospital, Fukuoka University, for the low abdominal mass, acute renal failure and anemia. Computed tomography (CT) demonstrated bilateral hydronephrosis and a cystic mass with a septum occupying the whole pelvic cavity (fig. 1, 2). After post voiding, a urethral catheter was inserted and 3,000 ml of residual urine was removed. After removal of the residual urine, gross hematuria appeared however, no catheter obstruction due to blood clots occurred, and the next day the Hb decreased to 3.9 g/dl and therefore a blood transfusion was needed.

Cystoscopy revealed an orifice of a diverticulum near the right ureteral orifice, though there was no blood tamponade in the bladder and diverticulum. Some parts of the mucous membrane in the diverticulum displayed redness and

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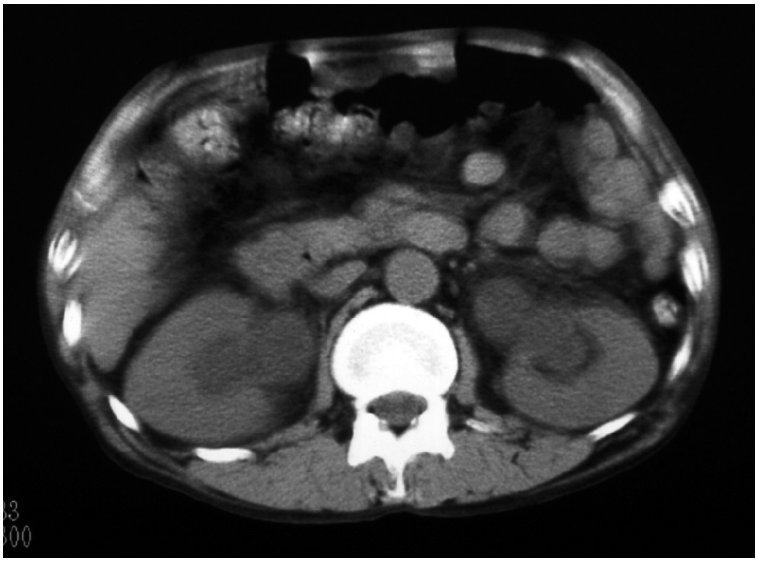

Fig. 1. CT scan demonstrating bilateral hydronephrosis

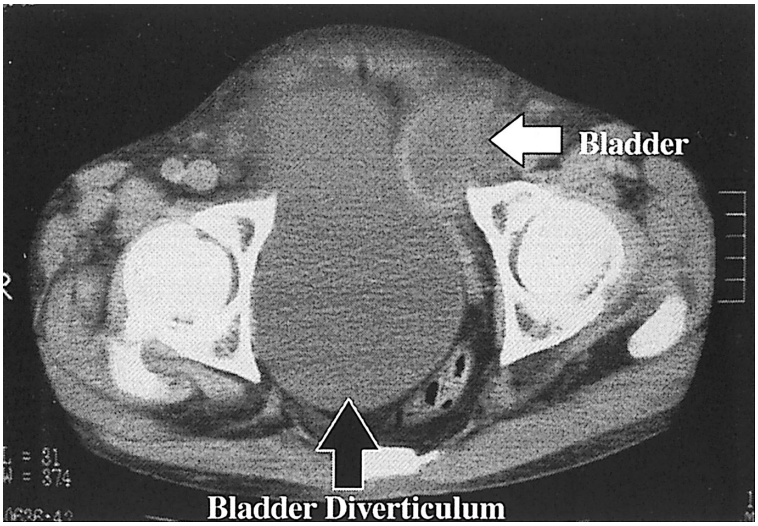

Fig. 2. Abdominal CT scan demonstrating a large cysticlesion with a septum-like structure in the pelvis. The bladder is displaced to the left by diverticulum

some bleeding, which was though to have resolted from the overdistention of the bladder mucosa. There was no bladder neck contracture, prostatic hypertrophy, urethral valves or urethral strictures. Retrograde cystography demonstrated the existence of a large bladder diverticulum, vesicoureteral reflux (bilateral grade 1) while that the bladder was displaced leftwards by the huge diverticulum. We thought that acute urinary retention had occurred because of the huge bladder diverticulum compressing and displaying the bladder and bladder neck.

After urethral catheter indwells, the renal function returned to normal (BUN 10, Cr 0.8) for 3 days. The patient underwent a bladder diverticulectomy, and convalescence was uneventful. A histopathological examination showed diverticulum. After removing of the huge bladder diverticulum, uroflowmetry revealed normal voiding (a voiding volume of 237 ml, residual urine 0 ml, max flow rate 17 ml/sec, and average flow rate 10 ml/sec), and hydronephrosis was shown to have

disappeared by ultrasound. After the diverticurectomy, no hematuria has been observed and the urinalysis findings have been normal (WBC 1–4/HPF, RBC 1–4/HPF) since the diverticulectomy. This diverticulum was thought to be congenital because there was no disease resulting in a voiding disturbance on cystoscopy or on cystography examination. Furthermore, taking the patients history into consideration, a normal urine flow was achieved after the diverticulectomy. We finally determined that this case was one of congenital bladder diverticulum resulting in acute renal failure and severe anemia due to the large diverticulum compressing the bladder neck and bleeding caused by the overdistention of the bladder mucosa.

Discussion

Prostatic hypertrophy and bladder neck obstruction are the major causes of bladder diverticula in male patients. Urinary retention secondary to a bladder diverticulum has also been reported, but this condition caused by a congenital bladder diverticulum is rare[1)–3)]. The reason for the urinary retention in this case was thought to be secondary to the diverticular compression of the bladder neck and urethra. Acute urinary retention had begun 3 months before admission, and so the bladder diverticulum had gradually enlarged ; therefore, pressure from the diverticulum to the bladder neck and urethra eventually became strong enough to cause urinary retention. Moreover, our patient had acute post renal failure caused by an increasing intravesical pressure which was demonstrated when it was resolved by intravesical catheterization. The reason for the severe anemia was thought to be due to the bleeding from the overdistended bladder mucosa in the diverticulum, because cystoscopy showed bleeding that had occurred after acute urinary retention. This case demonstrated that when clinicians look at large pelvic cystic masses and urinary retention, consideration should also be given to acute renal failure and gross hematuria after installing an indwelling catheter. To our knowledge this is the first report of acute renal failure with severe anemia caused by a congenital bladder diverticulum.

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