

# Idiopathic giant atonic bladder (6000 mL in volume) present for 15 years with no urinary symptoms

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## Abstract

Urinary retention is common in patients with neurologic disorders. We present a case of asymptomatic idiopathic giant bladder from which 6000 mL urine was drained. This is the largest volume of bladder that we found in the literature.

The urinary bladder is an unusual structure in that it is autonomically innervated yet functions under voluntary control. Although it is well-known that patients with a variety of neurological diseases suffer disturbances of continence and micturition, the precise ways in which these disorders affect the neurophysiological mechanisms of the bladder are poorly understood. Indeed, when a patient presents with urinary dysfunction, it is often difficult to be certain whether there is a neurological basis for the symptoms, or whether they are purely the result of a local abnormality, such as bladder outflow obstruction.<sup>1</sup>

We present a case of giant bladder from which 6000 mL urine was drained via a urinary catheter. This is the largest volume of bladder that we found in the literature. The patient was asymptomatic except for abdominal distention, and we could not find any disorder that might be the cause of this massive bladder distention.

## Case report

A 62-year-old male was admitted to our hospital with the complaint of rectal bleeding after defecation for 2 months. He also lost 3 kilograms of weight during this period. On physical examination, significant abdominal distention was detected (Fig. 1). From the patient's history, we learned that he had a gradual increase of this distension for 15 years. He had no urinary complaints. A vegetative and polypoid mass was detected in the rectum 8 to 10 cm from the anal verge by rectoscopy and biopsies were taken. After having the histopathologic diagnosis as adenocarcinoma of

the rectum, the patient underwent surgical operation. All preoperative laboratory tests, including urea and creatinine, were within normal values. Preoperative ultrasonography revealed a 24 × 23-cm cystic mass filling abdomen and pelvis. Computerized tomography (CT) also confirmed a 24 × 23 × 13-cm cystic mass with a delicate capsule and firm septations that supposedly originated from the mesentery (Fig. 2). The bladder could not be visualized probably due to inadequate filling with radiopaque substance. The rectal wall was thick along 5 cm of length. In the operating room, a urinary catheter was inserted for urinary outflow follow-up. After catheterization, 6000 mL of urine was drained, and the abdominal distention disappeared (Fig. 3). Laparotomy was performed and it was seen that there was no cystic mass in the abdominal cavity except for atonic bladder; so we decided that the cause of abdominal distention was atonic bladder, not another cystic mass (Fig. 4). Low anterior resection was performed. The tumour did not invade surrounding tissues and it was easily removed. Anastomosis was performed by stapler. A giant atonic bladder was detected, and a urologist was consulted during surgery. Since the patient had no obvious urinary complaints until the operation, he preferred not to have any bladder reduction procedure. After the operation, further urodynamic investigation was planned to evaluate his huge capacity bladder. However, following catheter removal, the patient could not urinate and he was taken into the clean intermittent catheter (CIC) treatment. On magnetic resonance imaging, there was no finding for multiple sclerosis or lumbar disc herniation. The pathology report was as follows: adenocarcinoma, Astler-Coller stage C2, and there was only one pericolic lymph node metastasis. There was no local invasion of carcinoma in pathological examination. He had chemotherapy for rectum cancer. He is still under close follow-up by us and urologists.

## Discussion

Urinary retention, though less prevalent in the general population, is common in patients with neurologic disorders. It



**Fig. 1.** Significant abdominal distention, before the insertion of urinary catheter.

has been identified in more than 27% of patients admitted for rehabilitation, with 20% of cases both asymptomatic and unsuspected at presentation. The causes of storage and voiding dysfunction are myriad, diverse and often multifactorial. They range from a simple and reversible urinary tract infection to prostatic hypertrophy or cancer, urethral hypermobility with or without associated pelvic organ prolapse, pharmacologic effects, and neurologic dysfunction, anywhere along the neuraxis from the brain to the spinal cord, or in the peripheral nerves or ganglia. Voiding dysfunction may result from impaired bladder contractility (due to sensory or motor defects), elevated outlet resistance, or a combination of the two. It is often identified after a patient presents with urinary retention and complaints of recurrent urinary tract infection, urinary frequency, nocturia, or even incontinence, but patients with chronic urinary retention may be asymptomatic in spite of large volume retention (1000 mL) and associated upper urinary tract injury.<sup>2</sup>

Methods of examination which have been used to investigate the atonic bladder include urodynamic tests to determine bladder function, cystograms to evaluate for vesicoureteral reflux, and cystoscopy to evaluate bladder anatomy. Evaluation of the central nervous system should be completed when appropriate. Anatomic studies of the pelvis, such as ultrasound, computerized tomography, urography and magnetic resonance imaging, provide complementary information and should be used when indicated.<sup>2,3</sup> Uroflowmetry could not be performed because of urinary retention in our patient.

Sylvester and colleagues presented two cases of painless urinary retention secondary to central intervertebral disc prolapse.<sup>4</sup> In both cases, there were no associated urinary or neurological signs; in our patient, retention was the only feature. In Sylvester's two cases, the duration of the symptoms was 4 days in one patient and some months in the other.



**Fig. 2.** Preoperative computerized tomography of the patient.

Conversely, our patient had at least 15 years of gradually increasing abdominal distention.

The other possible causes of neurogenic bladder are multiple sclerosis and spinal cord injury.<sup>5,6</sup> Although our patient had no neurological symptoms and no pathological neurological finding on physical examination, we performed cranial and lumbosacral magnetic resonance imaging to exclude neurogenic causes of atonic bladder. Neither multiple sclerosis nor lumbar disc protrusion or cauda equina syndrome was detected.

The other possible cause of atonic bladder may be the local invasion of autonomic nerves of bladder by rectum carcinoma. This, however, was not the cause in our patient. There was no local invasion seen in the pathology examination and, more importantly, the abdominal distention was present for years.

The goals of bladder management are to prevent upper and lower urinary tract complications, including hydronephrosis, renal calculi, bladder calculi and vesicoureteral reflux.<sup>7</sup> Interestingly, there were no urological symptoms in our patient except for an abdominal distention. He said he had micturition feeling and after micturition he felt relieved. He had no urinary infection in the anamnesis. On preoperative



**Fig. 3.** The abdominal distention disappeared after urinary catheterization.

CT evaluation, there was no pathological finding, such as hydronephrosis, renal calculi or vesicoureteral reflux.

## Conclusion

We present a case of giant bladder 6000 mL in volume. This is the largest volume of bladder that we have found in the literature. After these investigations, we postulated this case as idiopathic atonic bladder. We concluded that atonic bladder might be asymptomatic for years, 15 years in this case, and interferes with intraabdominal cysts in the differential diagnosis.

**Competing interests:** None declared.

This paper has been peer-reviewed.



**Fig. 4.** The peroperative appearance of the giant gallbladder.

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