



# Giant Bladder due to Chronic Urinary Retention: A Rarely Case Seen in the Emergency Department a Case Report

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## Abstract

The giant bladder (GB) is a very rare condition in the elderly population in which the bladder volume increases progressively, usually painlessly. It often develops due to chronic urinary obstruction caused by benign prostatic hyperplasia or neurogenic disorders. Here, we present a case of a GB with a volume of 5,500 mL developed due to chronic urinary retention in a 63-year-old male patient. Only 5 GB cases with a volume of 5 L or more have been reported in the literature. It can lead to a condition that disrupts the quality of life of the patient, such as kidney failure. Rarely, it can cause life-threatening conditions (such as pulmonary embolism) by compressing the large vessels in the abdomen. The GB should be considered in the differential diagnosis of patients admitted to the emergency department with complaints of voiding symptoms and progressive abdominal distension.

**Keywords:** Giant, obstruction, bladder, urinary retention

## Introduction

The giant bladder (GB) is an extremely rare condition in aging men, and is characterized by a generally painless increase in bladder volume (1). It often develops due to chronic urinary obstruction caused by benign prostatic hyperplasia (BPH) or neurogenic disorders. It is a clinical entity that progresses slowly and possibly asymptotically for a long time (2). Only five cases of GB with a volume of 5 L or more have been reported in the literature. In this study, we present a case of a GB with a volume of 5,500 milliliters in a 63-year-old male patient who was admitted to the emergency department with the complaint of abdominal pain and distension.

## Case Report

A 63-year-old male patient without a history of systemic disease was admitted to the emergency department with complaints of abdominal pain, abdominal distension and mild difficulty in urinating. Vital signs of the patient were stable and no problems were detected. He did not have any systemic diseases, such as diabetes or neurogenic disorders. Although he previously stated that he was diagnosed with BPH at another center, he did not use any medication for his BPH. There was sensitivity in the abdominal examination. Digital rectal examination revealed growth that was compatible with the adenoma.

Results of urinalysis and prostate specific antigen tests were within normal limits. Bacterial growth was not detected in the urine culture. On ultrasonography, a cystic lesion that filled the entire abdomen and compatible with the globe vesicale was described. Prostate volume was determined as 190 grams. On the whole abdominal tomography of the patient, a large bladder measuring 189x163x252 mm extending to the epigastric region was observed [Figure 1A (Sagittal section: red arrow)/1B (Coronal section)/1C (Transverse section: red arrow)]. Additionally, pelvic sagging of approximately 5 cm was observed at the bladder floor (Figure 1A: blue arrow). In transverse sections, it was observed that the bladder dome reached the level of the renal pelvis Figure 1C: bladder dome (red arrow), renal pelvis (blue arrow). Detrusor atony was found in the urodynamic study of the patient (Figure 2). Neurological examination was evaluated as normal by the neurology consultation. No abnormal findings were found on cranial and lumbar magnetic resonance imaging. Approximately 5.500 mL of residual urine was evacuated with a urethral catheter. The catheter of the patient was removed after a week of follow-up. Clean intermittent catheterization (TAC) was initiated by providing the patient with the necessary training. This article was written after obtaining informed consent form from the patient.

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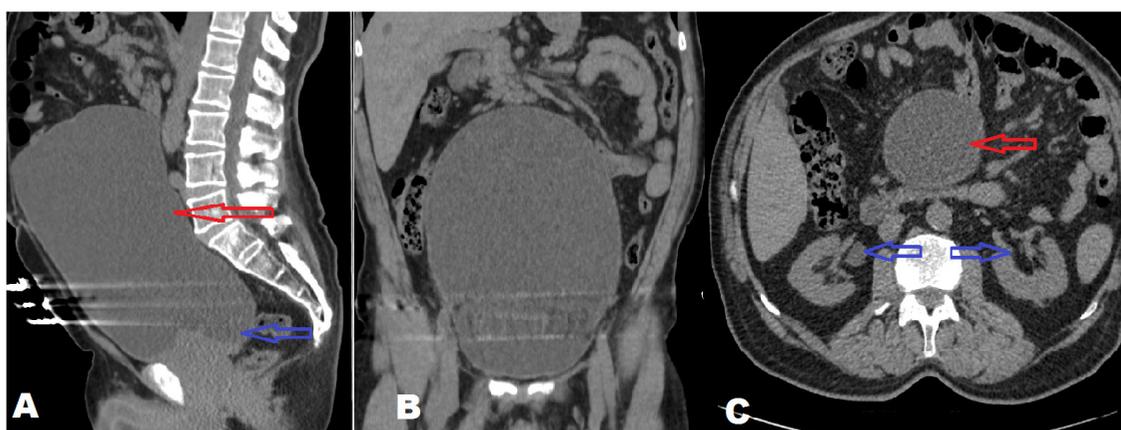
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## Discussion

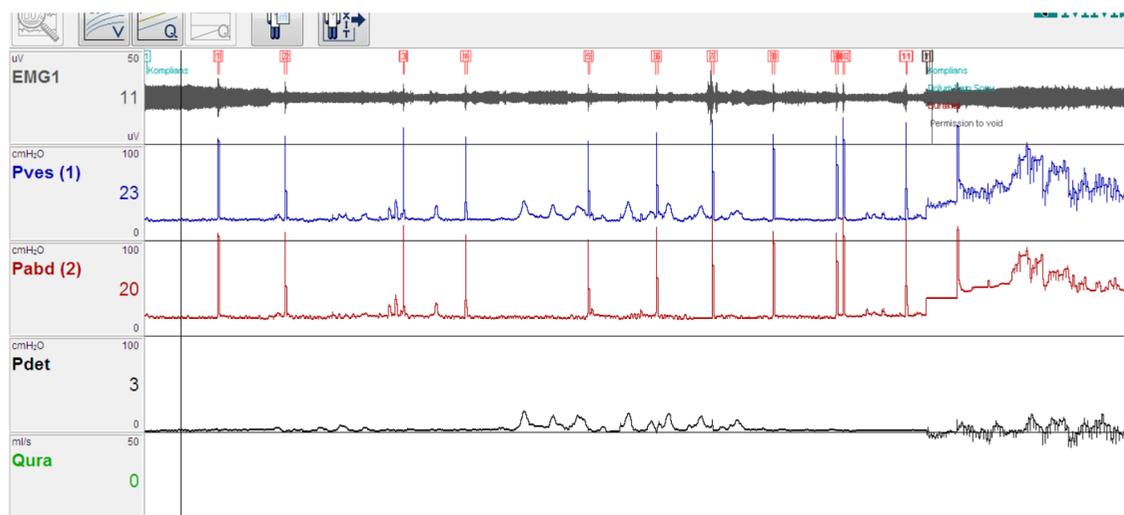
GB is a condition characterized by a progressive increase in bladder volume without pain due to chronic urinary retention (CUR). Unlike acute urinary retention, which is a sudden and painful condition, CUR is usually painless and can be palpated even after urinating. To diagnose CUR, post-void residual urine volume (PVRV) is measured in patients who can urinate, and bladder volume in men who cannot urinate. Neurological disorders such as insufficient detrusor activity, diabetic neuropathy, and causes such as BPH leading to prolonged bladder outlet obstruction may lead to CUR (3). In the cystometry of our case, decreased bladder filling pressure, atonic detrusor and high PVRV were detected. There was no dilatation in the upper urinary system. In the literature, a case of GB with a volume of 6 liters has been reported, which is called idiopathic because the etiological cause could not be determined (4). However, in this study, there is no data showing that a urodynamic study was conducted on the patient to detect bladder outlet obstruction or detrusor atony. The fact that all five cases with a bladder volume of 5 liters or

more reported in the literature are male, is important in terms of showing the additional contribution of BPH to the development of GB, even if diabetic neuropathy is shown as an etiological factor in some (5).

Patients may present with complaints such as difficulty in urination in cases where the etiology is bladder outlet obstruction such as BPH. Additionally, GB may cause symptoms such as abdominal pain, distension and constipation by compressing the surrounding organs. Similarly, compression of the vena cava inferior may cause edema in the lower extremities due to vena cava inferior syndrome (VCIS) (2). However, BPH-related GB has been reported in 30 cases with VCIS with smaller PVRVs (1). Another case with pulmonary artery embolism due to VCIS caused by a 5 liters GB has also been reported (6). Although ultrasonography is the gold standard diagnostic tool, neighboring organs cannot be evaluated clearly due to the GB. Computed tomography can be performed to reveal the problems that may occur in adjacent organs due to external compression. Urodynamic tests should be performed to reveal bladder outlet obstruction or detrusor atony.



**Figure 1.** A. Sagittal view of the bladder on abdominal CT (red arrow). Approximately 5 cm of pelvic saging is observed at the bladder floor (blue arrow). B. Coronal view of the bladder on abdominal CT. C. Transverse sections of the abdominal CT show the bladder dome (red arrow) reaching the renal pelvis (blue arrow) level. CT: Computed tomography



**Figure 2.** Image of the patient's urodynamic study

In the treatment, first, the patient should be catheterized and bladder decompression should be achieved. Etiological factors such as BPH or stones that lead to obstruction should be treated. Reduction cystoplasty can be performed in suitable cases. As in our case, the evacuation of the bladder and protection of the upper urinary system should be aimed by recommending a clean intermittent catheterization to patients with detrusor atony.

GB should be considered in the differential diagnosis of patients admitted to the emergency department with complaints of voiding symptoms and progressive abdominal distension. In addition to impairing the quality of life by causing renal failure, GB may cause life-threatening conditions such as pulmonary embolism because of compression on neighboring organs.

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### Ethics

**Informed Consent:** This article was written after obtaining informed consent form from the patient.

**Peer-review:** Externally peer-reviewed.

### Authorship Contributions

Concept: O.A., M.E., A.H.T., Design: O.A., M.E., A.H.T., Data Collection or Processing: O.A., M.E., A.H.T., Analysis or Interpretation: O.A., M.E., A.H.T., Literature Search: O.A., M.E., A.H.T., Writing: O.A., M.E., A.H.T.

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