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## Giant bladder stones: Cases from a Late Consultation

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### Abstract

Bladder macro-lithiasis, although rare, is a significant clinical entity requiring considerable attention. A bladder stone weighing >150 g and a diameter of >5 cm is a rare finding and is usually associated with bladder outlet obstruction, urinary tract infections, or the presence of intravesical foreign bodies and is rarely associated with renal failure. It is therefore essential to recognize the risk factors, establish an accurate diagnosis, and implement appropriate management.

We present 3 cases of bladder macrolithiasis diagnosed in a particular social context. Three male patients presented with dysuria and hypogastric pain that had been developing for several years and were only consulted when the symptoms became very severe. Medical imaging led to the diagnosis of bladder macrolithiasis occupying almost the entire bladder. Extraction by suprapubic cystotomy was performed in all 3 cases. Postoperative management was uncomplicated. These observations highlight the need for late consultation in a society where questions relating to the urogenital sphere remain taboo.

**Keywords:** bladder stones; macrolithiasis; suprapubic cystotomy; late management

### Introduction:

Bladder stones, although relatively common, are generally small in size and present relatively minor treatment challenges. However, bladder macro-lithiasis, characterized by exceptionally large stones occupying most of the bladder, remains a clinical rarity. [1] In this context, we report three particularly instructive cases of macro-lithiasis, all male, experienced years of urological symptoms, but consulted late due to social, cultural, and psychological factors. Two experienced progressive micturition difficulties, while the third, a quadriplegic, was admitted urgently with obstructive renal failure. These cases underline the crucial

importance of early consultation for urological symptoms while highlighting the challenges faced by patients in a society where issues related to the urogenital sphere often remain taboo.

This article aims to raise awareness among healthcare professionals and the general public of the importance of bladder stones early management, particularly in cases of macro-lithiasis, to avoid serious complications and improve patients' quality of life.

### Patients and observations:

#### Case number 1:

A 68-year-old patient consulted for miction disorders, characterized by dysuria, a weak urine

stream, and pollakiuria. These symptoms had been present for two years and had progressively deteriorated. No family or personal history of urinary lithiasis was identified. The patient reported no painful crises similar to renal colic. He also mentioned regular consumption of meat, dairy products, and salt. Physical examination revealed a hard, deeply fixed hypogastric mass. A digital rectal examination detected the mass anteriorly. Ultrasound confirmed the presence of voluminous intravesical lithiasis, with no other abnormalities of the urinary tree. An X-ray of the urinary tract confirmed the diagnosis, showing a calcific opacity

in the bladder. (Figure 1) Urinalysis, haemogram, creatinine, ionogram, and uricemia were all within normal limits. A suprapubic cystotomy was performed, enabling the extraction of a 7.3-centimeter-diameter, rough, porous, pearly-white bladder stone weighing 373 grams. After analysis, it was identified as being mainly composed of calcium phosphate.

The patient was advised to drink at least 2 liters of water daily and to limit his intake of meat, salt, and quick sugar. Annual monitoring was implemented, and there was no recurrence after 24 months.



Figure 1: An X-ray image showing a calcific opacity in the bladder.

**Case number 2:**

A 70-year-old patient was consulted for symptoms of dysuria, pollakiuria, and nocturia, accompanied by 4 to 5 nocturnal awakenings to urinate. He had no family or personal history of urinary lithiasis. Faced with persistent symptoms and worsening dysuria, he consulted our facility. Physical examination revealed a hard, fixed hypogastric mass. Rectal examination revealed an enlarged prostate beneath the mass. A standard X-ray confirmed the presence of a voluminous bladder lithiasis. (Figure 2) Urinary ultrasound showed an enlarged prostate, measuring 48 grams, homogeneous in appearance, with no

other anatomical abnormalities. Urinalysis revealed no germs. Blood tests, including hemogram, creatinine, ionogram and uricemia, were within normal limits. A suprapubic cystostomy was performed to remove a 6.8\*2.2 centimetre-long, weighing 140 grams. (Figure 3) post-operative management was without any complications. The composition of the stone was predominantly phosphocalcic. The patient received dietary advice and a prescription for an alpha-blocker, as well as prostate monitoring. At a 3-month follow-up, the patient presented a good mictional bell with a maximum urinary flow rate of 13 ml/s.

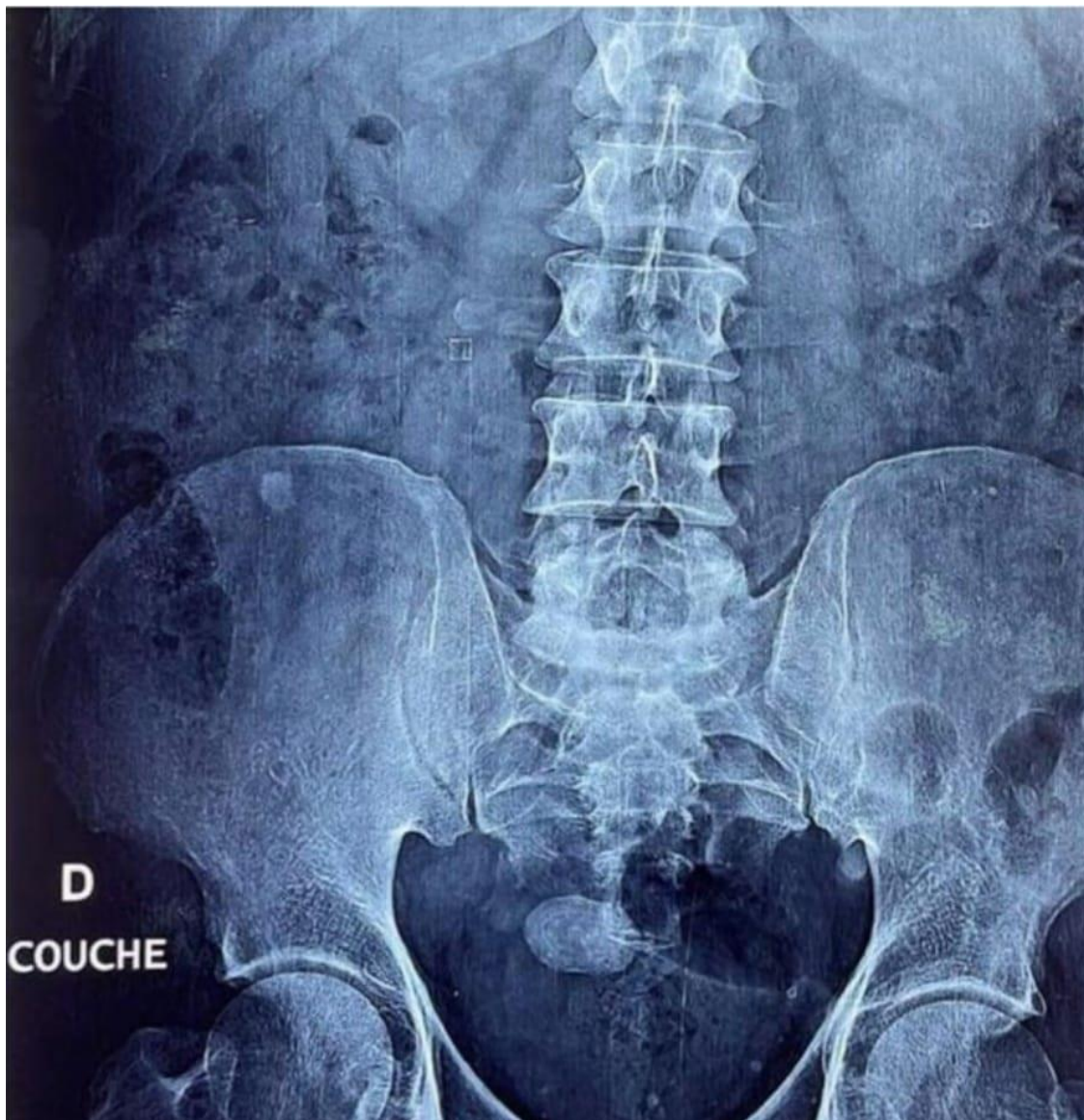


Figure 2: An X-ray image of the urinary tract showing a calcific opacity in the bladder.



Figure 3: Post-operative image of stone bladder measuring 6\*2.2cm

**Case number 3:**

A 35-year-old patient, quadriplegic since childhood trauma to the cervical spine, was admitted as an emergency due to an altered general condition. He had no family or personal history of urinary lithiasis. On clinical examination, the patient was stable and afebrile. Physical examination revealed a hard, fixed hypogastric mass, with no other associated signs. Blood work revealed renal failure, with serum creatinine measured at 243  $\mu\text{mol/l}$ , urea at 23.5 mg/dl, and hyperkalemia at 6.2 mEq/l, while the electrocardiogram showed no abnormal electrical signs.

A CT scan revealed dilatation of the pyelocalic cavities of both kidneys, suggesting an obstructive origin. In addition, two large bladder stones were

identified, measuring 8 cm and 6 cm respectively. (Figure 4+5) Given the failure of natural drainage, bilateral nephrostomies were performed.

A suprapubic cystostomy was performed 48 hours later to remove both stones. The first was 8.3 cm long and weighed 270 grams, while the second was 5.9 cm long and weighed 180 grams. (Figure 6) The postoperative course was uncomplicated. Analysis of the composition of the stones revealed that they consisted mainly of calcium phosphate.

The diagnosis of neurological bladder collapse was raised, particularly in view of the patient's failure to resume normal micturition. Consequently, the patient was fitted with an indwelling urinary catheter on discharge, after refusing hetero catheterization.



Figure 4: An X-ray image of the urinary tract showing a calcific opacity in the bladder.

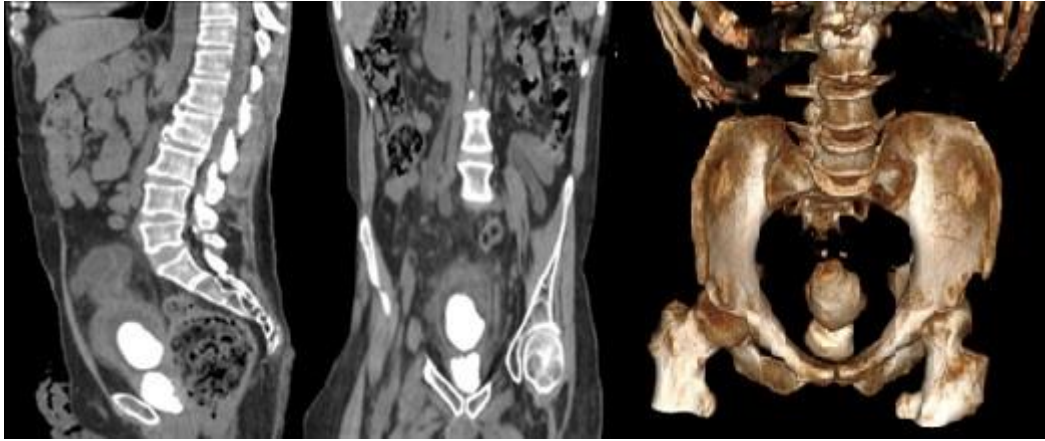


Figure 5: A CT scan showing two bladder stones.



Figure 6: Post-operative image of the stones measuring 8.3 and 5.9cm.

## Discussion

Bladder stones account for around 5% of all urinary calculi. They are most often associated with voiding dysfunction, chronic infection, or the presence of an intravesical foreign body [2]. Risk factors for the development of bladder stones in men include prostatic hypertrophy, urethral strictures, neurological disorders, the presence of a foreign body inside the bladder, or even a descending kidney stone. [3] This stone disease has been described in numerous ways, some of them very old: the oldest stone described dates to 4800 BC and was found in the bladder of a 16-year-old Egyptian boy. They have also sometimes been infamous, like Bossuet's or Napoleon III's. [1]

Large bladder calculi are often found in patients with other associated conditions, which may overshadow urinary symptoms [3]. Risk factors for urinary calculi include hereditary factors, found in 40% of cases, urinary tract infections, anatomical abnormalities of the urinary tract, medications, and dietary factors [4]. Symptoms of bladder stones include dysuria caused by the stone itself or associated urinary tract infections, recurrent urinary tract infections, urinary retention, and haematuria [5]. Renal failure is rare in these cases [6]. Bladder stones are usually single, but in the presence of urinary retention, multiple stones may be present in 25-30% of cases. Giant bladder stones usually develop from a single nidus, whether a focus of infected material, a foreign body, or a ureteral stone passed into the bladder. However, the fusion of several bladder stones can also be the cause [7]. Although bladder stones are commonly seen with renal or ureteral calculi, they can rarely occur without associated upper urinary tract stones, as is the case with our patients.

The formation of bladder macrolithiasis takes several years. In our context, the formation of these bladder mega-lithiases has been favored by the social context. Indeed, subjects relating to the urogenital sphere are often considered taboo.

Patients, especially those who are relatively old, may feel uncomfortable talking about these issues. As a result, our patients only consulted us at an advanced stage.

In contrast to the relatively high number of case reports of giant bladder stones, a limited number of cases of giant bladder stones causing renal failure to have been cited in the literature, because bladder stones are mobile within the bladder cavity. [8] Consequently, they generally do not interfere with urine flow and rarely lead to the development of renal failure secondary to obstruction of the bladder outlet. However, if left untreated, they can become embedded in the bladder neck or exert mechanical compression on the ureteral orifices, leading to obstructive uropathy [9]. As in our third case.

Treatment of bladder stones depends on their size, location, density, and number [6]. Conservative treatment includes urine alkalinization for uric acid stones with a urinary pH > 6.5. Extracorporeal shock wave lithotripsy (ESWL) is another option, particularly for patients at high anesthetic risk, and those who fear anesthesia or endoscopic procedures [10]. However, shockwave lithotripsy does not appear to give good results for stones larger than 2 cm. [4]

Surgical methods of removing bladder stones are either transurethral lithotripsy or open surgery. Recourse to open surgery is currently justified only by the failure of endoscopic methods. Transurethral lithotripsy, on the other hand, is not very effective in the treatment of giant bladder stones, especially in the presence of associated severe urinary tract infections. In addition, it increases the risk of infection and post-operative complications and prolongs the operating time [11]. Recurrence after surgical removal of the stone is rare [5].

Bladder stones are less common today than they were 100 years ago, thanks to improved diet, greater awareness of the problem, and vigorous treatment of lower urinary tract symptoms in patients with known risk factors.

**Conclusion:**

Voluminous bladder lithiasis is rare but can significantly compromise a patient's quality of life. They develop over several years, and their symptoms may be non-specific or even asymptomatic, leading to undiagnosed cases. In other cases, bladder stones may manifest as renal failure. It is therefore essential to recognize the risk factors, establish an accurate diagnosis, and implement appropriate management.

**Competing interests:**

The authors declare no competing interests.

**Informed Consent:** The patient's consent was voluntary and informed.

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**References:**

- [1] Stones and foreign bodies of the bladder and the urethra A. Houlgatte a,\* , R. Fournier b a Hôpital du Val-de-Grâce, 74, boulevard de Port-Royal, 75230 Paris cedex 05, France
- [2] E.A. Nugroho, D. Junita, Y.H. Wijaya, Giant bladder stone with history of recurrence urinary tract infections: A rare case, *Urol Case Rep.* 26 (2019), 100945. Sep 1.
- [3] C. Ma, B. Lu, E. Sun, Giant bladder stone in a male patient: a case report, *Medicine (Baltimore)* 95 (30) (2016)
- [4] A.L.L. Diniz, R. de Janeiro, R. de Janeiro, R. de Janeiro, R. de Janeiro, Giant bladder stone and renal failure: a case report, literature review and future perspectives, *Open Access Libr. J.* 4 (01) (2017)
- [5] R.F. Edlich, Response to letter to the editor, *J. Emerg. Med.* 26 (1) (2004 Jan) 123.
- [6] S.S. Wahyudi, A.R.S. Rozidi, R.S. Zharfan, D. Setyowati, Giant bladder stone with squamous cell carcinoma of bladder: case report and the literature review, *Int. J. Surg. Case Rep.* 79 (2021) 379–385.
- [7] O. " Adsan, O. " Yildiz, B. Oztürk, " A. Memis,, A giant bladder stone: managed with osteotome, *Int. Urol. Nephrol.* 28 (2) (1996) 163–166.
- [8] Prabhuswamy VK, Tiwari R, Krishnamoorthy R. A giant dumbbell shaped vesico-prostatic urethral calculus: a case report and review of literature. *Case Reports in Urology* 2013; Article ID 167635, 5 pages. <http://dx.doi.org/10.1155/2013/167635>
- [9] Y. Ofluoglu, H.R. Aydin, R. Kocaaslan, S. Adanur, T. Ziypak, A cause of renal dysfunction: a Giant bladder stone, *Eurasian J. Med.* 45 (3) (2013 Oct) 211–213
- [10] S. Katsimperis, K. Pikramenos, K. Livadas, N. Chatzikipraktis, T.T. Bellos, Giant bladder stone: a case report, *Cureus* 14 (5) (2022).
- [11] X. Wei, Y. Qin, X. Wang, J. Qian, S. Niu, S. Tu, et al., Giant bladder stone: a case report, *Exp. Ther. Med.* 24 (2) (2022) 1–5