



Giant Urinary Bladder Stone Formed Around a Pin in a Young Sudanese Girl: A Case Report and Literature Review

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Abstract

Bladder Stones “BS” can be formed for many reasons; one of them is being secondary to a foreign body. Reporting and publishing issues about stones formed around different kinds of foreign bodies in the bladder are increasing. We present a case of an unusual giant urinary BS formed around foreign body (pin) in a 14-year girl. The entrance mechanism was unknown as informed by the patient and her parents. Based on the chronic symptoms of lower urinary tract described by the patient, urinalysis and ultrasonography were requested in addition to kidney, ureter and bladder plain X-ray “KUB”. Then diagnosis of giant BS with pin inside was established. The stone and the attached pin were removed through open surgery without complications. Still foreign body acting as nidus for giant vesical stone is an expected scenario. Knowing mechanism of entrance is important in preventing occurrence, however, this mechanism remains obscured in some patients, so this necessitates more search concentrating on identifying the motive for insertion, conditions and events that leads to entrance of different foreign bodies in urinary bladder in order to minimize the rate of occurrence of such condition.

Keywords: Giant bladder stone; Pin; Girl; Sudan

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Introduction

Bladder stone is an old problem in surgery. Children are at high risk for developing BS in endemic areas [1]. During the last decades, incidence was declining in developed countries, however, urinary bladder stones represent a great public health challenge in developing countries [2,3]. Most are formed *de novo* within the bladder. Bladder stones are classified as primary idiopathic, migrant, or secondary calculi. Aetiology of BS formation are considered to be multi factorial; Low protein diet, dehydration, use of goat milk and poor socio-economic conditions were major risk factors identified for the development of bladder stones [3]. Secondary BS may occur following urinary stasis, infections, or foreign bodies e.g. catheters, intrauterine devices, suture materials, surgical gauze or self-inserted foreign bodies [4]. These foreign bodies will act as nidus for development of stones. Mechanism of entrance of foreign bodies is either insertion through the urethra, migration from adjacent structures, left inadvertently after open bladder operations or penetration through the abdominal wall. The usual presentation is presence urinary frequency, strangury and sensation of incomplete evacuation in addition to haematuria and dysuria [5].

Case Presentation

A 14 years old girl presented to our referred clinic complaining of suprapubic pain, burning micturition, haematuria, dribbling of urine and increased frequency in the last 2 years. She had received treatment for having recurrent urinary tract infection “UTI” many times. She was a healthy looking girl with no obvious medical or known mental abnormality. She had a normal childhood and accepted school performance. Her parents emphasized that she had no history of self-inflicting urethral injury. Also she had no history of surgery for a urinary tract problem. Urinalysis revealed presence of uncountable pus cells, and red blood cells. With full surprises KUB showed a straight wire like radio-opaque shadow lying transversely inside a giant irregular shaped bladder stone with its tip emerging outside the stone (Figure 1). Suprapubic cysto lithotomy was performed; (5 cm × 4.5 cm) stone with pin inside was removed carefully, part of the pin emerged from the stone by about



Figure 1: KUB showing the pin within the bladder stone.



Figure 2: The pin after removal from the stone.

2 cm (Figure 2). It was that kind of pin used to fix scarves on the hair of Sudanese girls. It has a sharp pointed tip and rounded end made of plastic (which was impeded inside the stone). Post-operative period was uneventful and the patient discharged home the next day.

Discussion

In recent decades, urinary bladder stones due to foreign bodies have been frequently reported in literature. These foreign bodies may be sub classified into iatrogenic and non-iatrogenic bodies. Iatrogenic bodies include suture material, shattered Foley catheter balloons, egg shell calcifications that form on a catheter balloon, staples, urethral stents, migrating contraceptive devices, erosions of surgical implants, and prostatic urethral stents. Non-iatrogenic bodies include objects pierce the anterior abdominal wall to reach the bladder and objects placed into the bladder by the patients through the urethra for recreational and various other reasons. The most common motive for self-insertion of foreign body in the lower urinary tract is different forms of sexual gratification, curiosity, autoerotic stimulation, psychiatric illness, and trauma [6,7]. The urethra is the main entrance if the foreign body is inserted into the urinary tract [8]. Urethral foreign bodies usually migrate into the bladder by being pushed further into the urethra during trials of removing them or by involuntary perineal muscle contraction [9]. Urethral self-insertion of foreign bodies may be complicated when the inserted object migrates to the proximal urethra or bladder and cannot be retrieved [9]. Perforation of the urinary bladder by foreign bodies from adjacent organs is extremely rare [10]. These may occur from Gastro Intestinal Tract "GIT" or female genital organ [11]. In rare cases foreign bodies can erode the GIT and produce enterovesical fistula [11]. These include chicken bones, wooden stick, knife blade, thermometer and peace of gauze. Foreign bodies may sometimes reach the urinary bladder by

traumatic route [10,12,13]. These include bullets and shells [14]. In our patient we couldn't find an obvious mechanism for insertion of the pin, despite the efforts we made to extract some clue from the patient and family. But based on symptoms which were lasting for a long period, the pin might have entered during early childhood. It could be inserted through urethra or entered through abdominal wall years ago during play or even crawling. Similar postulations have been described by Abdulhad [15]. He reported a sewing needle as a nidus for giant vesical stone in a fourteen-year-old girl. The patient was of the same age group and the foreign body was near similar in nature. Bakhshi et al. [16] reported a giant BS around an unusual foreign body in 25 year old female. In their case it was introduced by the patient who has behavioral disorders. Although our patient has no psychiatric evaluation, we considered her free of psychiatric illness as her parents declare that she had a normal childhood. BS may reach several centimeters in size without causing symptoms. It may be detected incidentally, some patients present with supra pubic pain, dysuria, intermittency, frequency, hesitancy, dribbling and lastly urine retention. Occasionally parents may notice priapism and enuresis. Signs include terminal gross haematuria, sudden termination of voiding and excessive friction of the penis. For our patient the most irritating symptoms were frequency and haematuria. Ultrasonography and KUB are investigations that used initially to identify BS. Enhanced computed scan, Magnetic Resonant Imaging (MRI) and Intra-Venous Urography (IVU) are used in some patients [17]. Cystoscopy helps in determining the exact size, number, and location of BS. It is a definitive diagnostic procedure [5,9]. In most cases, KUB is sufficient to locate and identify radio opaque BS and foreign bodies as in our case. In general, most BS removal procedures are performed via endoscopy. However, giant BS as in this case is removed by supra pubic cystostomy where endoscopic removal is not possible. The procedure was simple, easy, safe, catheter less, drain less and without noticeable complications [18]. It can be successfully performed in our rural hospital by junior doctors using the available operating room setup [18]. To the best of our knowledge, no exact similar foreign body was reported as nidus for urinary BS. One case has been reported of hair pin – induce large bladder stone that was by Abdul Ghafar et al. [19] In that case the pin is of different figure and renal failure was presenting symptoms. In our patient presentation were symptoms of recurrent UTI. Fadi et al. [20], Al also reported a case of obstructed renal failure due to intravesical stone formed around copper wires. Niema H et al. [10] reported a single case of self-inserted hair pin in the urinary bladder, but not complicated by bladder stone.

Conclusion

Urinary BS should be suspected in any patients with recurrent urinary tract infection. Reporting cases of intra vesical foreign bodies that act as a nidus for stones is increasing. Knowing the mechanism of entrance is important in preventing occurrence. However, this mechanism remains obscured in some patients. This necessitates more searches concentrating on identifying the motive for insertion, conditions and events that lead to entrance of different foreign bodies in urinary bladder and this will minimize the rate of occurrence of such a condition.

References

1. Papatsoris AG, Varkarakis I, Dellis A, Deliveliotis C. Bladder lithiasis: from open surgery to lithotripsy. *Urological Res.* 2006;34(3):163-7.
2. Brisson P, Woll M, Parker D, Durbin R. Bladder stones in Afghan children.

- Military medicine. 2012;177(11):1403-5.
3. Lal B, Paryani JP, Memon SU. Childhood bladder stones-an endemic disease of developing countries. *J of Ayub Med Coll Abbottabad*. 2015;27(1):17-21.
 4. Rafique M. Vesical calculus formation on permanent sutures. *J College Physicians Surg-Pakistan: JCPSP*. 2005;15(6):373-4.
 5. Lin T, Chuang CK, Wong YC, Liao HC. Gossypiboma: migration of retained surgical gauze and spontaneous transurethral protrusion. *BJU Int*. 1999;84(7):879-80.
 6. Moon SJ, Kim DH, Chung JH, Jo JK, Son YW, Choi HY, et al. Unusual foreign bodies in the urinary bladder and urethra due to autoerotism. *Int Neurourol J*. 2010;14(3):186-9.
 7. Loeser A, Gerharz EW, Riedmiller H. Chronic perforation of the urinary bladder by self-inserted foreign body. *Int Urogynecol J Pelvic Floor Dysfunct*. 2007;18(6):689-90.
 8. Cho DS, Kim SJ, Choi JB. Foreign bodies in urethra and bladder by implements used during sex behavior. *Korean J Urol*. 2003;44(11):1131-4.
 9. Rahman NU, Elliott SP, McAninch JW. Self-inflicted male urethral foreign body insertion: Endoscopic management and complications. *BJU Int*. 2004;94(7):1051-3.
 10. Al-Heeti NH, Jasim ME, Nassar JW, Hameed MY. Foreign bodies in the urinary bladder: 10 year experience in Al-Ramadi teaching hospital. *Iraqi Postgrad Med J*. 2013;12:111-9.
 11. El-Diasty TA, Shokeir AA, El-Gharib MS, Sherif LS, Shamaa MA. Bladder stone: a complication of intravesical migration of lippes loop. *Scandinavian J Urol Nephrol*. 1993;27(2):279-80.
 12. Andrews NJ, Hall CN, Taylor T. Colovesical fistula caused by a chicken bone. *Br J Urol*. 1988;62(6):617.
 13. Rafique M. Intravesical foreign bodies: review and current management strategies. *Urol J*. 2008;5(4):223-31.
 14. Halkic N, Wisard M, Abdelmoumene A, Vuilleumier H. A large bullet in the bladder. *Swiss Surg*. 2001;7(3):139-40.
 15. Abdulhadi M E MAA. Sewing needle as a nidus for giant vesical stone. *AIU*. 2010;8(1):61.
 16. Bakhshi GD Shaikh A, Borisa AD. Giant Vesical Calculus around an unusual foreign body. *Bombay Hospital J*. 2009;51(3).
 17. Maheshwari PN, Oswal AT, Bansal M. Percutaneous cystolithotomy for vesical calculi: a better approach. *Tech Urol*. 1999;5(1):40-2.
 18. Doumi EB. Vesical calculi in El Obeid Hospital, Western Sudan. *Sudan J Med Sci*. 2008;3(1):29-32.
 19. Ghaffar A. Chronic renal failure secondary to a large vesical calculus formed on a neglected self introduced foreign body. *NMJ*. 2010;2.
 20. Kamal F, Clark AT, Lavallée LT, Roberts M, Watterson J. Intravesical foreign body-induced bladder calculi resulting in obstructive renal failure. *Can Urol Assoc J*. 2008;2(5):546-8.