



Pediatrics

Giant bladder stone formed around sewing-needle in childhood: A case report and literature review

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ABSTRACT

We present cases of sewing needle as a nidus of the bladder stone in a seven-year-old girl admitted to the hospital with chief complaining burning micturition for 6 months. The Kidney, Ureter, and Bladder (KUB) X-ray revealed the bladder stone was 3.5 cm in length at the pelvic cavity and sewing needle in its center. The bladder stone was removed by open cystolithotomy without any complications.

Introduction

Foreign material within the bladder may be introduced in iatrogenically, via migration from an adjacent organ, by penetrating injury, or by self-insertion.¹ Foreign bodies provide an ideal nidus for stone formation and are responsible for the majority of the bladder stone in the females but very rare cases in childhood.^{1,2}

Case presentation

A seven-year-old girl was hospitalized for complaining of burning micturition. Since six months ago, she had visited several general practitioners and was diagnosed with and treated for a urinary tract infection (UTI). She's family is a farmer and lives in a rural seaside area and no history of bladder stones. On physical examination, the patient's weight was 16 kg (26.45 lbs) and height was 120 cm. Vital signs and blood investigation were within normal limits. Urinalysis revealed 23–25 erythrocytes/high-power field (HPF) and full of leukocytes/HPF on microscopic examination. A KUB X-ray showed a radio-opaque shadow with a tip emerging outside the giant bladder stone, which its size stone 3,5 × 2,5 × 1,6 cm (Fig. 1).

Open cystolithotomy under general anesthesia for bladder stone extraction was done (Fig. 2), leaving and indwelling urethral catheter for 5 days and no drainage of perivesical. Biochemical analysis of the stone showed a calcium oxalate monohydrate. The stone weight of 16 g. Follow up after six months, the patient has remained symptom-free.

Discussion

Bladder stones caused by foreign bodies in children are rarely found because the symptoms are not typical and are often found inadvertently. Until 2019 there was only five cases reported worldwide. In 2010 Abdulhadi et al. reported a sewing needle as a nidus for giant vesical stone in a fourteen-year-old girl without any complication post-operative open cystolithotomy.² Abdul Ghafar et al. have been reported of hairpin – induce large bladder stone and renal failure was presenting symptoms.³ Fadi et al. also reported a case of obstructed renal failure due to intra-vesical stone formed around copper wires.⁴ Niema H et al. reported a single case of the self-inserted hairpin in the urinary bladder without stone.¹ Mutasim et al. reported a 14 years old girl with a giant bladder stone with irritating urinary symptoms for 2 years.³ Almost any conceived object has been introduced into the urinary bladder, and these foreign bodies could be classified into five categories¹: *First*: The self-introduced foreign bodies through the urethra by the patients with senility, eroticism, sexual perversion, abnormal psyche, and mental retardation. *Second*: Iatrogenic foreign bodies like surgical gauze after prostatectomy, broken ureteric catheter, or suture needle. *Third*: Living foreign bodies like a snake that was removed from the bladder in prague. *Fourth*: Foreign bodies can migrate from the adjacent organ into the urinary tract e.g. intrauterine contraceptive device. *Fifth*: Foreign bodies as a result of penetrated trauma as a bullet. In this case the possibility of a foreign object is inserted by the patient himself.

Symptoms of bladder stones in children vary with age,⁵ and may reach several centimeters in size without causing symptoms.³ The sign

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Fig. 1. KUB shows Bladder stone with a sewing needle in its center.



Fig. 2. Bladder stone with the tip of a sewing needle.

includes Hematuria, either microscopic or macroscopic, has been reported in 33–90% of children with stones, while lower abdominal pain or pelvic pain occurs in approximately 50% of childhood cases.^{2,5} Irritating urinary symptoms caused either by the stone itself or by associated urinary infections, are also common manifestations of bladder stones.^{4,5} Urinary tract infections are most commonly associated with stones in preschool children.⁵

In this present case, the patient complains about dysuria and in urinalysis revealed we get a microscopic hematuria. Ultrasonography is a simple non-invasive technique² and KUB are investigations that used initially to identify bladder stones.^{2,3,5} Intravenous urography or retrograde urethro-cystography may provide additional information and

occasionally reveal incidental findings and unexpected radiolucent objects.⁴ Computed scan urography⁴ and Magnetic Resonant Imaging (MRI) sometimes are used in some patients.² In most cases, KUB is enough to locate and identify radio-opaque bladder stone and foreign bodies as in our case. In general, most bladder stone removal procedures are performed via endoscopy (cysto-litholopaxy).^{1,4,5} But in a big bladder stone like this present case must be removed by suprapubic cysto-lithotomy.^{1,3–5} This procedure was simple, easy, safe and fewer complications.³

The prognosis of bladder stones depends on etiology,³ the primary diagnosis, and adherence to therapy.⁵ Recurrence after surgical removal of the stone is very rare.⁵ This young girl had a normal renal function and no further symptoms of lower abdominal pain, urinary frequency or incontinence, and no recurrence of stone, after follow-up in the outpatient department six months after discharge from hospital.

Conclusion

Bladder stones in childhood should be suspected in any patients with irritating urinary symptoms or urinary tract infections. We report a case of bladder stone trigger by sewing needle as foreign bodies that act as a nidus.

Consent

Written informed consent was obtained from her parent patient for publication in this case report.

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Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.eucr.2019.101101>.

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