Trauma and reconstruction

Dead bone in bladder- sequestrum perforating into urinary bladder leading to hydroureteronephrosis masquerading as bladder calculus

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ABSTRACT

Sequestrum formation is a known complication of osteomyelitis. This is usually a source of chronic non resolving infection and inflammation. We present a rare case of pelvic sequestrum following septic arthritis of hip joint invading into the urinary bladder mimicking a bladder calculus and leading to hydroureteronephrosis.

Introduction

Bladder calculus is a common clinical entity. A radiopaque shadow in the pelvis is usually a bladder calculus unless proved otherwise. Sequestrum is a piece of dead bone that separates during the process of necrosis from the healing bone and is a known complication of osteomyelitis. This is a source of chronic infection that does not respond to antibiotics, reason being lack of vascularity. We present a rare case of sequestrum perforating into the urinary bladder and leading to hydroureteronephrosis.

Case report

A 32 year old male patient presented to our hospital with chief complaints of right flank pain for last 5 months and increased urinary frequency. There was no other associated lower urinary tract symptom. Patient had past history of septic arthritis of right hip joint in childhood. General physical examination and abdominal examination was normal. Ultrasound of abdomen revealed right sided hydroureteronephrosis and thickening of right trigonal region. X-ray radiograph of pelvis was showing a 4 x 3cm radiopaque shadow in the right side of pelvis near Ischial spine (figure-1). CT urography of the patient revealed right sided hydroureteronephrosis with lower ureteric stricture and a bony spur penetrating into urinary bladder near right vesicoureteric junction (figure-2). Cystoscopy was showing a bony spur within the bladder entering near the right vesicoureteric junction. Patient was planned for surgical removal of the bone fragment with boari flap. Abdomen was opened by right modified Gibson incision. Right ureter was found dilated proximally and thick walled with dense adhesions with surrounding structures. Right side of bladder was adherent to the lateral pelvic all. Careful dissection was done and bone sequestrum was identified, dissected from surrounding structures and removed intact (figure-3). 5-6 cm length of the distal ureter was affected by stricture. Boari flap was used to reconstruct the ureter over DJ stent.

Discussion

Septic arthritis can result because of the complication of acute hematogenous osteomyelitis or primarily can arise in the joint space and spread to the surrounding bone leading to osteomyelitis. Pelvic osteomyelitis being uncommon usually affects ileum due to its large blood supply. Sequestrum is a piece of dead bone that has separated during the process of necrosis and is a complication of osteomyelitis. Sequestrum becomes the source of chronic infection and often draining sinus that requires surgical excision. It does not respond to antibiotics because of kiavascularity. Our patient had history of septic arthritis of hip joint with osteomyelitis of the hip bone. Sequestrum had formed because of the osteomyelitis of the hip bone and migrated towards bladder. Over the years chronic inflammation and infection had led sequestrum eroding into the bladder and leading to hydroureteronephrosis.
The sequestrum could be seen as a radiopaque shadow in x-ray radiograph and can be easily confused with a bladder calculus. CT imaging was done to evaluate the radiopaque shadow and hydronephrosis. Computed tomography scan has better sensitivity in detecting the sequelae of osteomyelitis. Bone fragments can migrate into bladder following pelvic fractures. Ours is a rare case of sequestrum eroding into the bladder. Fetal bone migration into the bladder had been reported in the literature. We explored the patient to remove the sequestrum and reconstruct the lower ureter. Endoscopic removal of the sequestrum was not attempted because the part of sequestrum was outside the bladder and there was a chance of fracturing the sequestrum and leaving behind the residual fragment that can be the source of chronic infection. Since 5–6 cm of the length of ureter was affected and there were dense adhesions on the right wall of bladder, the boari flap was the ideal procedure to cover the defect of lower ureter.

Conclusion

A radio opaque shadow in the pelvic cannot always be a bladder calculus. Proper history taking and judicious use of imaging is necessary to reach a diagnosis. Preoperative planning is helpful to decide the best form of procedure for any pathology.

Declaration of competing interest

Nil

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Nil

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