BLADDER INJURY DURING INFECTED TOTAL HIP ARTHROPLASTY PROSTHESIS REMOVAL: REPORT OF A CASE AND REVIEW OF THE LITERATURE

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ABSTRACT

The bladder is the most frequently injured organ during pelvic surgery. However, during hip surgery, this complication is extremely rare. We report a case of bladder injury during total hip arthroplasty prosthesis removal surgery. A 65-year-old male was admitted to our hospital with left hip pain and wound infection. On plain radiograms, acetabular protrusion was identified. We decided to remove protruzed acetabular cup and place spacer. During the operation, unexpectedly bladder injury occurred. The rupture was sutured intraoperatively. We left a catheter in the bladder after internal urethrotomy to drain the urine.

Keywords: Arthroplasty, Bladder injury, Cystogram, Hip prosthesis removal, Infection

INTRODUCTION

Bladder injuries are caused by either blunt or penetrating trauma to the lower abdomen, pelvis or perineum. Blunt trauma is the more common mechanism, usually by a sudden deceleration, such as in a high-speed motor vehicle crash or fall, or from an external blow to the lower abdomen (1-3). The most frequently accompanying injury is a pelvic fracture, occuring in >95% of bladder ruptures caused by blunt trauma. Other concomitant injuries were defined as gunshot wounds which account for <10% of bladder injuries (1,4). Such injures can also occur during transurethral surgery, colon resection, or gynaecologic procedures (most commonly abdominal hysterectomy, caesarean section, pelvic mass excision) (2,5). Predisposing factors include scarring from prior surgery or radiation therapy, inflammation and extensive tumour burden. Such bladder injuries usually occur during surgery and are identified intraoperatively (2,4). However, during hip surgery, this complication is extremely rare. Herein, we report a case of bladder injury during hip prosthesis removal surgery.

CASE REPORT

We report a case of bladder injury during total hip arthroplasty prosthesis removal surgery. Our patient was a 65 year-old- male with left hip pain. Two years before admission, he said that he underwent total hip prosthesis surgery. Six months after the first operation, because of pain and infection, he was operated again and revision arthroplasty with exchange of the prosthesis was done. On admission, he had an active wound infection. An acetabular protrusion and purulent discharge were identified at first examination. We decided to remove protruzed acetabuler cup and place spacer via posterolateral hip incision. On control cystogram, close relationship of the acetabular spacer and the bladder was noticed. (Figure 1a and 1b)

Figure 1a and b

Cystograms showing close relationship between the bladder and acetabular spacer after primary suturing of the defect

Figure 1a

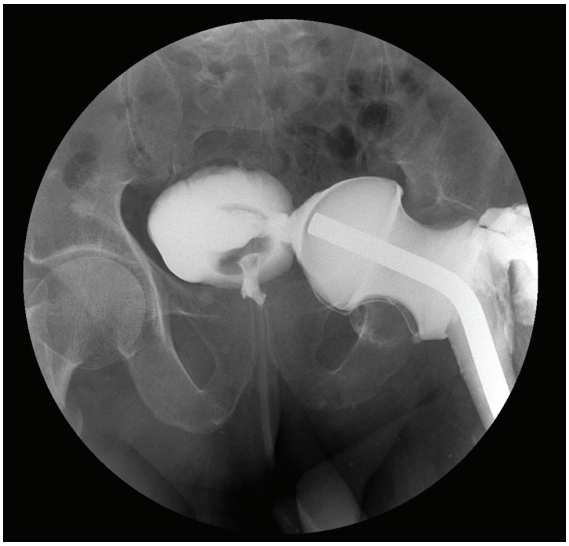
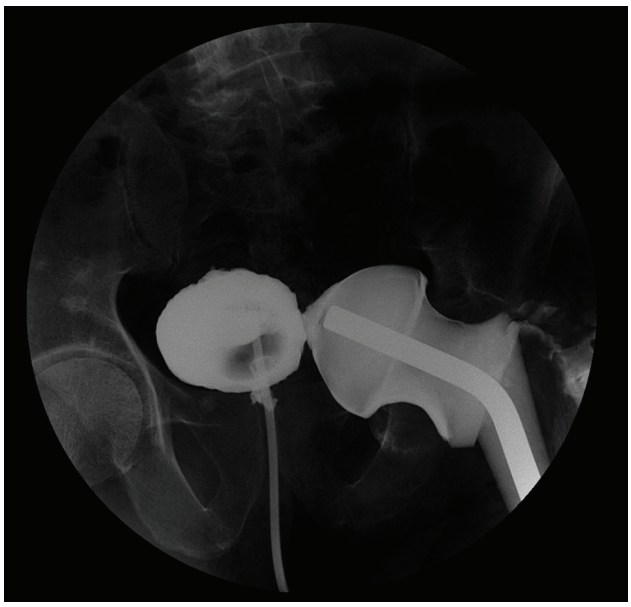


Figure 1b



During the operation, bladder injury occured. The rupture was sutured intraoperatively. We could not place a catheter into the bladder. He had concomitant urethral stricture. Internal urethrotomy was performed and a catheter was placed.

DISCUSSION

Intrapelvic cup migrations can result from several situations; mechanical loosening, malposition of the cup with chronic infections, injury, etc (6-8). Safe intrapelvic material removal is based on several inseperable principles like identification of the potential risks through a precise preoperative workup, surgical tactics designed to remove protruding material without injuring noble tissues (9,10). Severe intrapelvic protrusions after total hip arthroplasty may occur in cases of chronic infection. During hip surgery, the components threating the neighboring organs were most often cement and screws than the cup itself.

As expected, infection is another problem related to all implant surgeries. Bach *et al* (8) suggested that infection could be observed in up to half of the operated cases during hip arthroplasty surgery. Recently, Grauer *et al* (11) presented a case of a bladder tear occurring intraoperatively during a revision total hip arthroplasty. They proposed that multiple prior hip procedures might lead to adhesions of the bladder wall to the pelvic floor, and this could predispose the bladder to injury. In their paper, Kinmont (5) adviced that avoidance of the anterosuperior and anteroinferior quadrants was recommended for transacetabular screw placement to minimize the risk of injury to intrapelvic structures. He focused on revision arthroplasty in rheumatoid patients, and suggested that the acetabular bone was often soft and deficient, and the protective depth of obturator internus and psoas was usually reduced in those cases. Although, our patient had coxarthrosis on hip rather than rheumatoid arthritis, acetabular bone was soft, deficient and the muscles were reduced in our case.

In conclusion, before planning complex surgery to revise intrapelvic migration, the morphological and anatomical anatomy of the acetabulum must be well known (12-14). Especially, during the implantation of anterior quadrant screws, the orthopedist must be careful. In addition, the surgeon should be aware of intraoperative and postoperative haematuria in order to diagnose possible bladder injury and treat as soon as possible. Early diagnosis and treatment for bladder trauma is important in urological armamentarium for an acceptable outcome.

Conflicts of interest: None

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