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Spontaneous Urinary Voiding of a Metallic Implant After Operative Fixation of the Pubic Symphysis

A Case Report

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Displaced fractures and dislocations of the pelvic ring and acetabulum are usually treated with open reduction and internal fixation with a plate and screws. Loosening and migration of these plates can occur; however, to the best of our knowledge, we are the first to describe the migration of such implants into the urinary tract through the bladder wall. We report the case of a patient who experienced late migration of a screw and washer into the bladder with spontaneous voiding of the screw.

Case Report

In September 1992, a twenty-five-year-old man was brought to the emergency room of the Hospital São Lucas, Pontificia Universidade Católica do Rio Grande do Sul—PUCRS, in Porto Alegre, Brazil, after being run over by an automobile. The patient underwent exploratory laparotomy for a hemoperitoneum, and a splenectomy was performed. No evidence of bladder injury was noted. Skeletal traction was applied to the right lower extremity because of a transverse fracture of

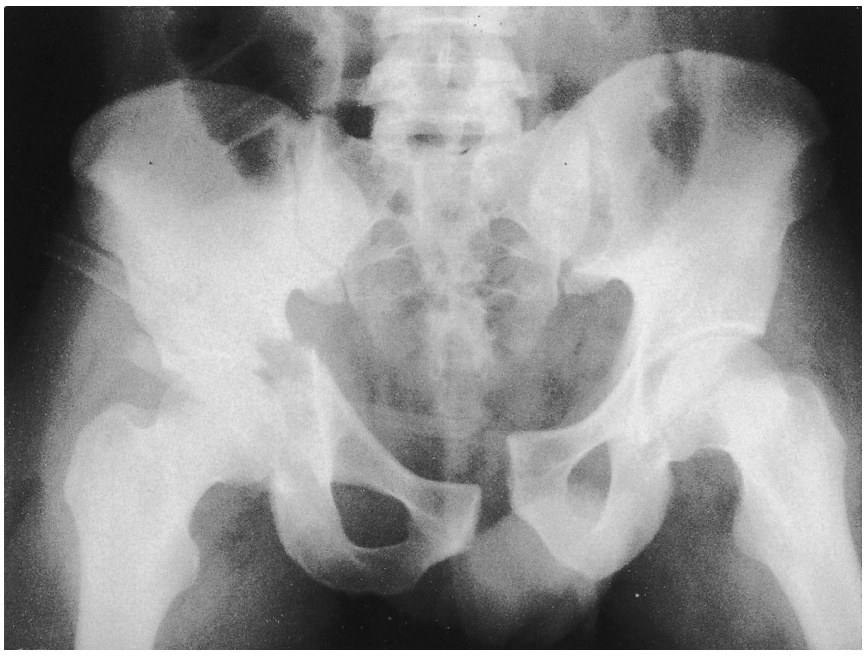

Fig. 1

Preoperative radiograph showing the transverse fracture of the right acetabulum, disruption of the pubic symphysis, and displacement of the left sacroiliac joint.

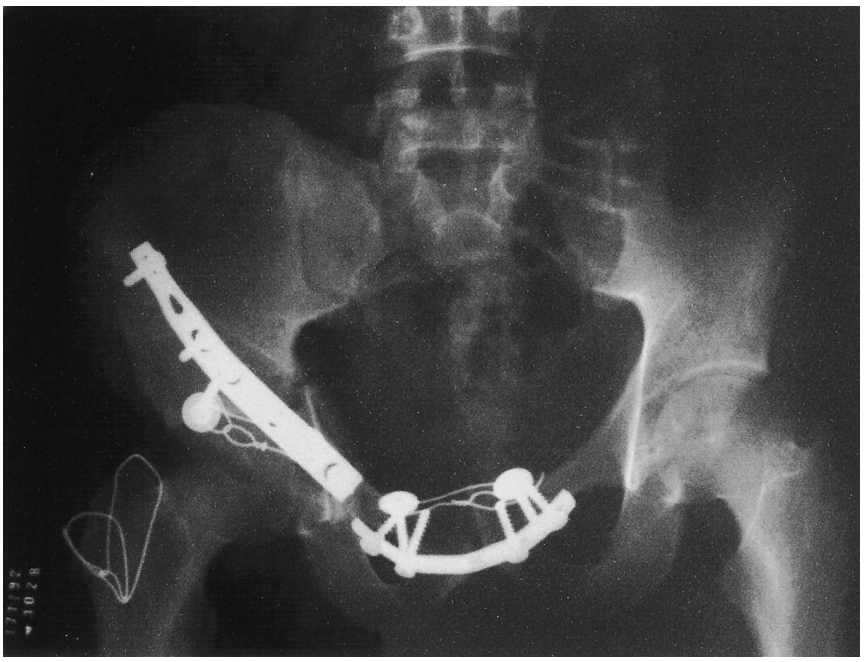

Fig. 2
Postoperative radiograph showing the nonanatomic reduction and internal fixation of the right acetabulum and pubic symphysis.

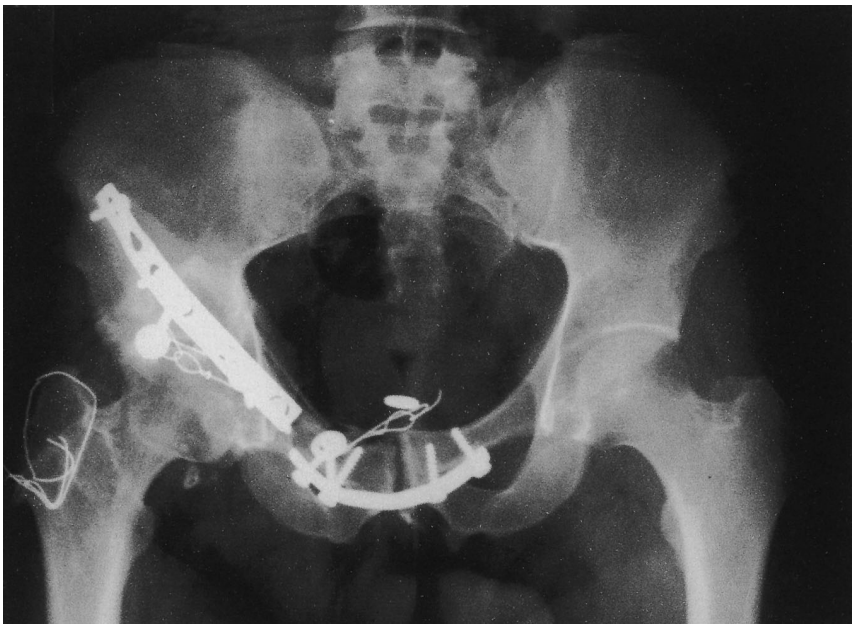

Fig. 3
Pelvic radiograph, made six years after the injury, showing the absence of a screw and a loosened washer in the suprapubic area. The radiograph suggests posttraumatic arthritis of the right hip and residual displacement of the pubic symphysis.

the right acetabulum, which was associated with disruption of the pubic symphysis and the left sacroiliac joint (Fig. 1). Two weeks later, after clinical stabilization of the patient, the right hip was explored through a Kocher-Langenbeck approach with an osteotomy of the greater trochanter. Multiple bone fragments were extracted from the joint, but the acetabular fracture could not be satisfactorily reduced. One week later, through an ilioinguinal approach, the acetabular fracture was reduced and was fixed with a plate and screws along the anterior column. The bladder was identified, and the space of Retzius was exposed, facilitating fixation of the pubic symphysis. No damage to the bladder occurred intraoperatively. Reduction and fixation of the symphysis pubis, with use of two screws with washers and a tension-band wire supplemented with an anterior plate and four screws, was performed. The hardware had no direct contact with the bladder. The operative reductions were not anatomic (Fig. 2). A superficial wound infection at the site of the incision

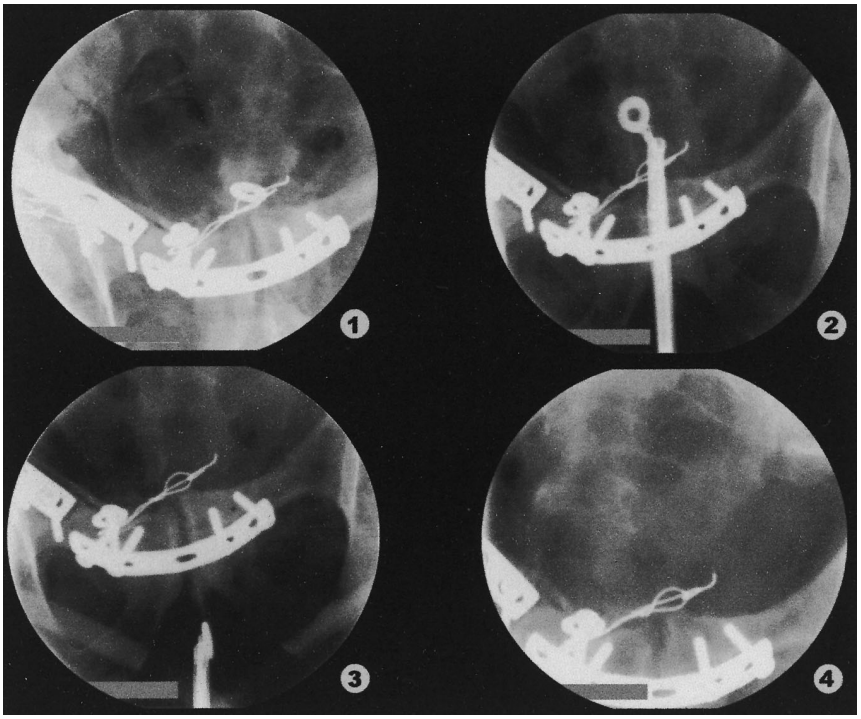

Fig. 4
Composite figure illustrating the sequential steps of cystoscopic removal of the washer after it had eroded through the bladder wall.

was successfully managed with a fourteen-day course of oral oxacillin and daily dressing changes. The patient was discharged forty-five days after admission. Weight-bearing was begun five months after surgery. A follow-up examination performed nine months after the injury revealed full recovery of function and no complications.

In June 1999, the patient was admitted because of acute hematuria, dysuria, and the spontaneous urethral voiding of a screw. An extensive urological history was negative. Pelvic radiographs demonstrated the absence of one of the two screws from the pubic symphysis (Fig. 3). Cystoscopy revealed a granulomatous inflammatory area in the anterior bladder wall, in which one of the metallic washers was identified and removed (Fig. 4). No urethral lacerations secondary to the spontaneous voiding of the screw were observed. An indwelling (18-French) Foley catheter was left in place for fourteen days to ensure complete healing of the vesical fistula. One month later, removal of all remaining metallic implants in the pubic symphysis was performed at our hospital. No fistulous tract or evidence of osteomyelitis was observed at that time. The patient was discharged without any operative complications. In March 2001, at a follow-up examination twenty-one months after the cystoscopy, he had no residual urological symptoms and only slight pain at maximum flexion and abduction of the right hip.

Discussion

The migration of foreign bodies into the urinary tract has been reported previously in the literature[1-3]. Fistulae between the bladder and the bowel following the migration of chicken bones, thermometers, toothpicks, and other objects are rare but well known[1-3]. Alagiri and Rabinovitch[3] observed that sharp objects can migrate into the bladder, producing pain, bleeding, or infection. Dietrick et al.[4] reported the migration of an intrauterine device into the bladder.

Recurrent urinary tract infections and hematuria are the most frequent signs of these events, and delays in accurate diagnosis are common. Eckford et al.[5] described a series of twenty-one patients with intravesical foreign bodies. They identified different etiologies, including the migration of objects from adjacent organs (small or large bowel or uterus), autointroduction (in psychiatric patients and children), and iatrogenic introduction (foreign bodies from abdominal or endoscopic surgical procedures). The foreign body was discovered most commonly as the nucleus of a bladder stone with secondary calcification of the foreign body. In that series, all foreign objects were removed endoscopically, although open surgical removal may be considered in patients with a large calcified foreign body. The case of one patient who had migration of bone cement into the urinary bladder after hip arthroplasty is the only report of which we are aware that involved an orthopaedic implant[6].

In our patient, the symptoms developed acutely, with spontaneous voiding of a screw. Possible risk factors for the intravesical migration of the screw and washer in our patient included the use of a sharp wire around the anterior bladder wall and the possibility of an occult operative or traumatic lesion of the bladder. However, a bladder lesion per se would

not have resulted in migration of the metallic implants but would merely have created a site for ingress of the implants. No urinary extravasation was observed at either the initial exploratory laparotomy or the operative fixation of the pelvis. The residual instability of the pelvic ring secondary to the sacroiliac disruption and nonanatomic reduction of the pubic symphysis may have contributed to the loosening and migration of the screw. Despite its rarity, this complication should be considered whenever urinary symptoms develop after operative fixation of a disrupted symphysis pubis. ■

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