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Case report

Bladder incarceration following anterior pelvic infix of a traumatic pubic symphysis diastasis treated with immediate open reduction and internal fixation

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ABSTRACT

Stabilization after a pelvic fracture can be accomplished using multiple techniques. The anterior external fixator has been traditionally used in variety of unstable pelvis either singly or in combination of posterior screws. These devices are cumbersome and restrict side turning and sitting particularly in obese patients. An alternative, anterior subcutaneous pelvic internal fixation technique (ASPIF) was developed which is well tolerated by patients for mobility and comfort and biomechanically more stable construct Complications of this construct included irritation of the lateral femoral cutaneous nerve, femoral nerve palsy &heterotypic ossification with reduced rates of infections and aseptic loosening as compared to external fixator. Bladder incarceration following treatment has never been reported and we encountered such a problem during management which we want to highlight.

1. Introduction

Anterior pelvic ring fixation may be achieved using multiple techniques.[1–4] Traditionally external fixator has been used temporarily for unstable pelvic fractures in damage control situations with hemodynamic instability, although their application can be definitive management.[5,6] However External fixation has a number of disadvantages, like being cumbersome, pin site infection (2–50%), osteomyelitis in (0–7%) and leading loss of reduction.[6–9] As an alternative the INFIX or "Pelvic Bridge" was introduced for use on principles of external fixation in obese patients.[6] It involves insertion of supra-acetabular pedicle screws connected by a subcutaneous cobalt-chromium contoured rod. Biomechanical studies have shown that the minimally invasive INFIX has superior stability to external fixation, due to the shorter lever arm of the construct.[10] However, compared with internal fixation, it has less stability and stiffness.[10] The INFIX or the anterior pelvic internal fixator (APIF) has known to cause sometimes irritation of the lateral femoral cutaneous nerve. Few reports of femoral nerve palsy have also been reported.[11] However iatrogenic urologic injuries, particularly bladder entrapment, due to closed reduction of symphyseal disruption as in anterior pelvic external fixation is remains a potential threat though never been reported with this procedure.

We report a case involving bladder herniation through a traumatic symphyseal diastasis with subsequent incarceration after attempted reduction with Pelvic internal fixation and a review of the literature.

2. Case report

A 60 years old male, farmer by occupation, admitted in the emergency department after 4 days of injury complaining of persistent pain in the lower abdomen and difficulty in walking following fall from his cycle. Physical examination revealed tenderness in the pubic bone with palpable gap at the pubic symphysis. There was restriction of range of movement of bilateral hip because of pain. Primary survey of the patient revealed no urinary complications and no other injury. Neurovascular examination was normal. Patient was advised plain radiograph initially where pubic diastasis was diagnosed (Fig. 1). For a detailed study,

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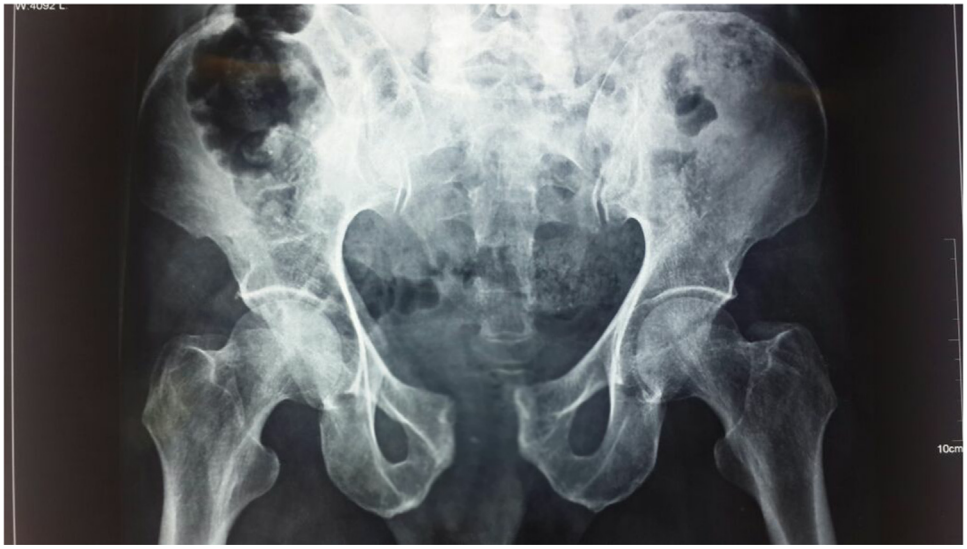

Fig. 1. Pre op X-ray showing pubic diastasis.

CT scan was done, which showed a 3.00 cm separation of pubic symphysis with middle and anterior sacroiliac ligament disruption (Fig. 2). After getting all preoperative blood investigations and fitness from anesthetist, the patient was posted for anterior pelvic internal fixator (infix). Under spinal anesthesia, two supra-acetabular pedicle screws of 60 mm length and 5.5 mm diameter were placed with mini incision. A contoured rod of 18 cm was tunneled through subcutaneous tissue in the anterior abdominal and diastasis compressed (Fig. 3). Surgery was uneventful but twelve hours post surgery the patient complained about sever pain in the lower abdomen, urinary frequency with hematuria. Patient was immediately catheterized and bladder incarceration was suspected, which was confirmed by the CT scan (Fig. 4).

The patient was taken back to emergency theatre and infix dismantled. Through Pfannenstien incision the diastasis was

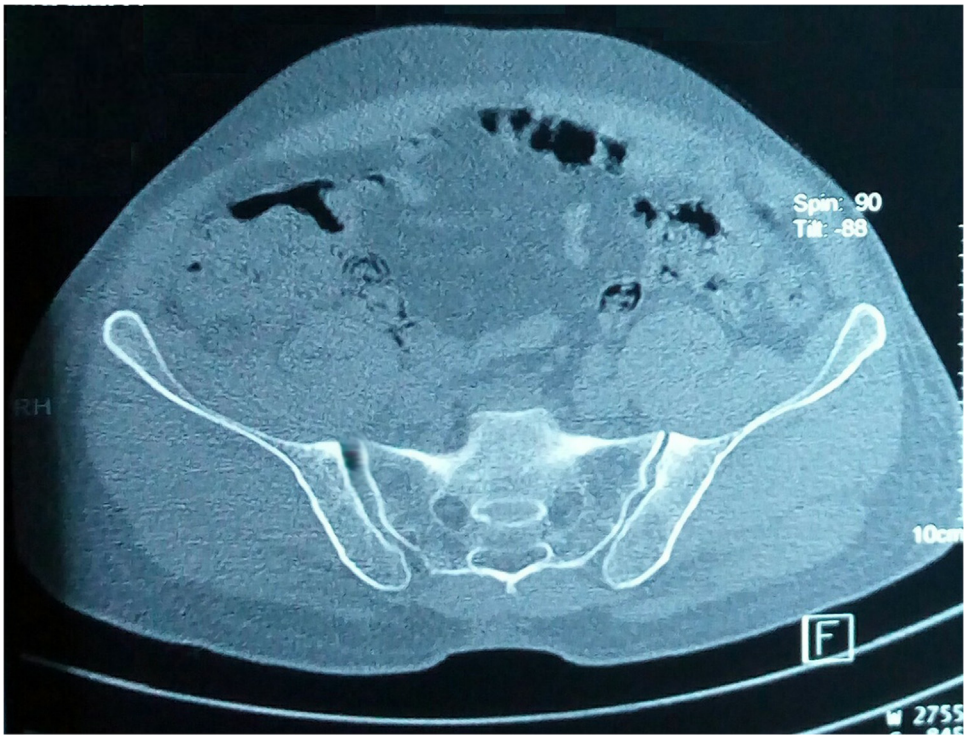

Fig. 2. Pre op CT showing ant and middle SI lig disruption.

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