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Percutaneous screw fixation of sacroiliac joint disruptions - A case report and literature review

TBATOU AMINE, ZEHIRI YOUSSEF, ABAYDI ANASS , RADI JIHAD , LAHRACH KAMAL , MARC LEGNAME , KHALIFE MAHMOUD , BOUTAYEB FAWZI

Department of Orthopedic Surgery A – Hassan II University Hospital, Fez , MOROCCO
Department of Orthopedic Surgery BELAIR - CHR METZ THIONVILLE , FRANCE
Corresponding Author: TBATOU AMINE
E-MAIL : aminetbatou2@gmail.com

ABSTRACT : *Percutaneous screw fixation is a minimally invasive technique used to stabilize sacroiliac joint disruptions. It provides strong fixation with few complications, provided there is a good understanding of pelvic anatomy and proper intraoperative radiological control.*

Keywords : percutaneous , disruptions , fixation .

INTRODUCTION:

Sacroiliac joint disruptions are rare injuries, often associated with high-energy or severe trauma. Radiological diagnosis requires cross-sectional imaging (CT scan). Conservative orthopedic treatment with bed rest can be prolonged and may lead to chronic instability. Percutaneous iliosacral screw fixation (PISF) is a reliable and effective method of osteosynthesis to maintain stabilization of the sacroiliac joint (1,2)

CASE REPORT:

This is a 59-year-old patient with no prior medical history, who sustained a work-related injury caused by being crushed between a wall and a heavy object. Upon admission, clinical examination found the patient conscious, well-oriented in time and space, with no evidence of cranial, thoracic, or abdominal trauma. There was partial functional impairment of the right lower limb, and the range of motion of the right hip in the supine position was limited. The patient was unable to stand.
A CT scan (CTAP) was performed as part of the initial trauma assessment, revealing a right sacroiliac joint disruption.

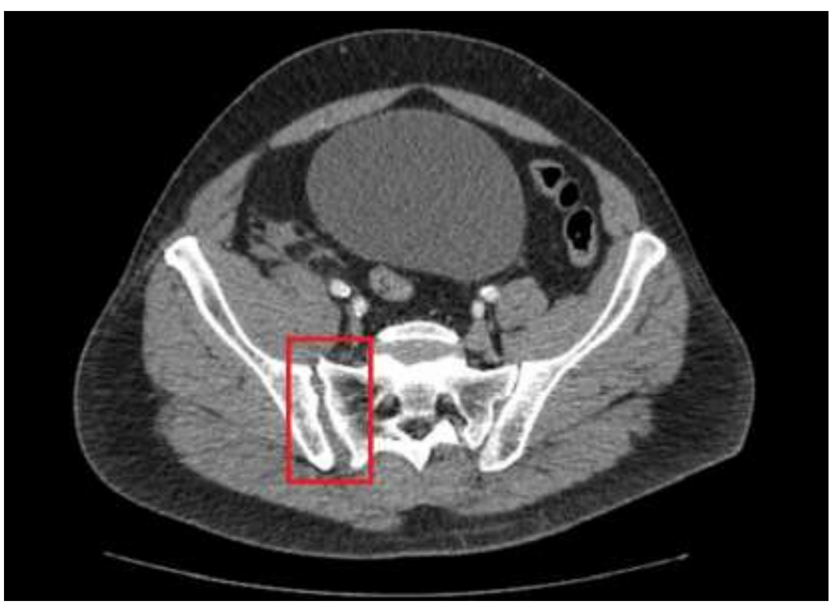

Figure 1 : Axial CT Scan – Right Sacroiliac Joint Disruption

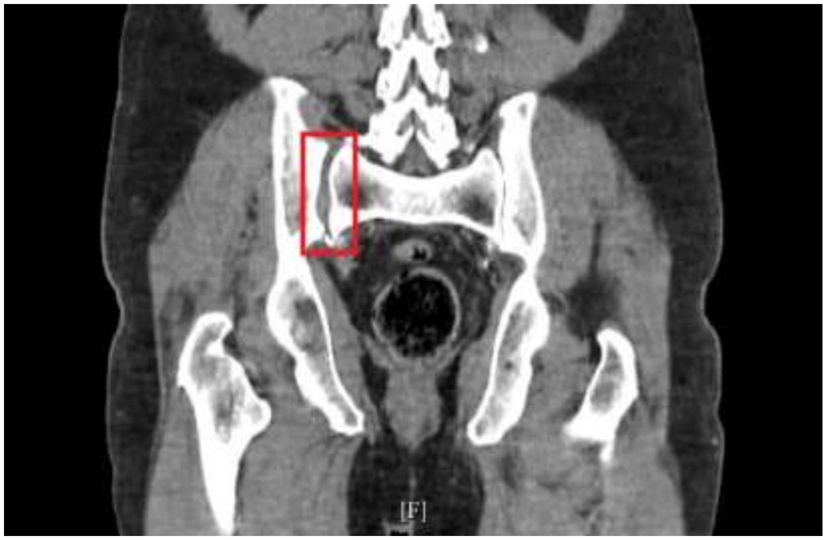

Figure 2: Coronal CT Scan – Right Sacroiliac Joint Disruption

A. Surgical Procedure:

The patient was taken to the operating room 48 hours after admission. The procedure was performed under general anesthesia, with the patient positioned supine on a standard operating table. Fluoroscopic control in both anteroposterior and lateral views was used to locate the site of the sacroiliac disruption. Through a radioguided percutaneous approach, a sacroiliac guidewire was inserted, followed by drilling with a cannulated drill bit, and placement of a 65 mm cancellous screw.

Figure 3: Anteroposterior and Oblique (Ala) Pelvic X-rays Showing Immediate Postoperative Control of Right Percutaneous Sacroiliac Screw Fixation

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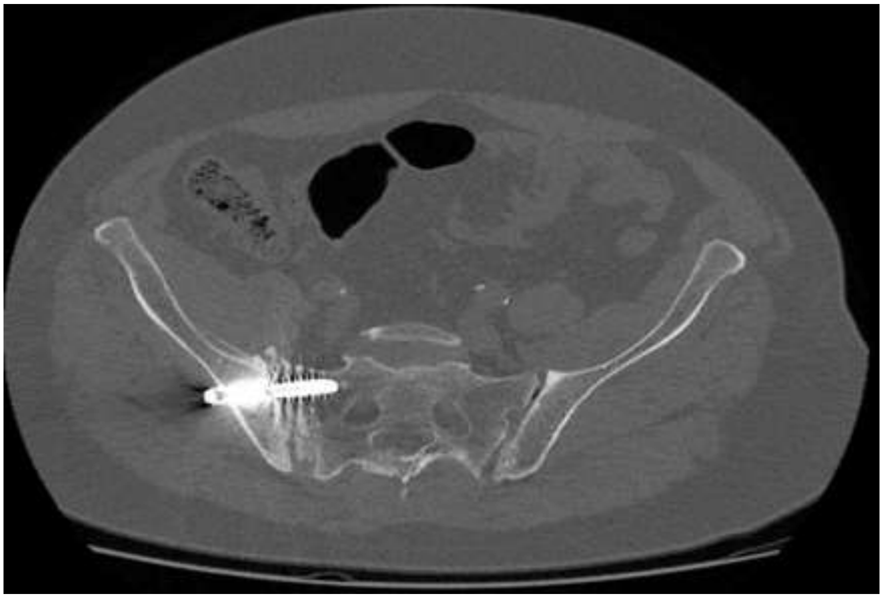

Figure 4: Axial CT Scan of Postoperative Control Showing the Placed Sacroiliac Screw

B. **Immediate Postoperative Course:**

The patient was hospitalized for 5 days. Full weight-bearing was contraindicated for 45 days. A semi-seated position was allowed under preventive anticoagulation coverage.
The patient did not complain of postoperative pain.
The mini percutaneous incision site was clean.
No postoperative complications were reported.

C. **Follow-up and Long-term Monitoring:**

A first follow-up was conducted after 6 weeks. The control radiographs were satisfactory. On examination, the patient was able to stand and take several steps without pain or feelings of instability. Rehabilitation was recommended to resume walking with full weight-bearing.
A second follow-up at 3 months postoperatively found the patient walking properly without deficits or pain, allowing him to return to his daily life and work.

Figure 04: Postoperative Follow-up X-rays at 6 Weeks (A), 3 Months (B), and 6 Months (C)

DISCUSSION:

Percutaneous screw fixation of sacroiliac joint disruptions is a reliable, minimally invasive, and effective technique for stabilizing the posterior pelvis. It allows satisfactory reduction, solid fixation, and promotes early functional recovery while minimizing blood loss and complications related to surgical approach. Mastery of pelvic anatomy and precise radiological guidance are essential to reduce iatrogenic risks, particularly neurological and vascular injuries. This technique is now considered a preferred option for managing posterior pelvic instabilities, especially in polytraumatized patients (3,4).

CONCLUSION:
Percutaneous screw fixation of sacroiliac joint disruptions is an effective and minimally invasive technique that ensures good stability. However, it requires perfect anatomical knowledge and rigorous radiological control.

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