

Bilateral sacroiliac joint dislocation - Recurrence anticipated at the time of delivery

Jagan Reddy, Dr. Monappa A Naik, Prof. Sharath K Rao, Dr. Sandeep Vijayan

Dept. of Orthopaedics, Kasturba hospital, Manipal, India

***Corresponding author**

K. Jagan Mohan Reddy

Email: jan.moh.reddy@gmail.com

Abstract: Dislocation of the sacroiliac (SI) joint is a severe injury with the potential for serious damage to surrounding visceral, vascular, and neural structures. Bilateral sacroiliac joint dislocation in the absence of disruption of anterior pelvic ring in a female is rare. Only few cases are reported. We present an interesting case of bilateral sacroiliac joint dislocation without anterior ring disruption in a young female with recurrence after 2.5 years at the time of delivery which is never reported.

Keywords: Sacroiliac joint, Dislocations, pelvic ring.

INTRODUCTION

Dislocation of the sacroiliac (SI) joint is a severe injury with the potential for serious damage to surrounding visceral, vascular, and neural structures. SI joint dislocations can occur as isolated injuries, but more commonly are associated with fractures of the sacrum, fractures of the iliac wing, or anterior pelvic ring disruptions [1-7].

Bilateral sacroiliac joint dislocations are rare when compared to bilateral sacroiliac joint fracture dislocations. These injuries are associated with life threatening complications like abdominal or vascular complications. These dislocations often present with anterior pelvic ring fractures. Bilateral sacroiliac joint dislocations without anterior pelvic ring fracture are rare. These type of fracture dislocations are never reported in reproductive age females.

CASE REPORT

A 27 year old lady presented to our emergency department following road traffic accident complaining of pain at the back and abdomen. On initial assessment patient was alert, oriented and hemodynamically stable but continued to have severe back pain and abdominal pain. Initially, a portable pelvis radiograph showed bilateral sacroiliac joint disruption without anterior rim fracture (figure 1). Ultrasound scan showed free fluid in the abdomen. So patient underwent a CE-CT abdomen and pelvis which showed grade 2 spleen laceration. A general surgery opinion was taken and was decided to manage splenic laceration conservatively. The CT scan of the pelvis confirmed isolated bilateral SI joint dislocations superiorly with left medial wall of the acetabulum fracture (figures 2& 3). No other pelvic ring or spinal fracture was found. On admission, the patient

was put on bilateral distal femoral skeletal traction with incremental weights every alternate day and checking the amount of reduction with portable radiographs every 3rd day. After satisfactory reduction, on day 10 after admission, patient was taken to the operating room for open stabilization of the bilateral SI joint disruptions. In a prone position, two standard incisions were made on either side of posterior superior iliac spine. Incision deepened sub-muscularly and sacroiliac joint exposed on either sides. Posterior sacroiliac ligaments were found disrupted. After reduction, it was fixed with a long reconstruction plate on to the ilium bridging both the sacroiliac joints. Anatomic reduction was confirmed with fluoroscopy intra-operatively and by plain films postoperatively. A large drain was placed and the incisions were closed. Postoperatively the patient remained hemodynamically stable and proceeded with physical therapy for non-weight bearing with bed-to-chair transfers on postoperative day 1. On physical examination, she had no neurologic or vascular impairment bilaterally. Her leg lengths were equal, and there was no sitting imbalance. The patient was put on non-weight bearing for 3 weeks with pelvic-Binder.



Fig-1: Showing pre-operative radiograph of bilateral sacroiliac dislocation

Later she was started on weight bearing with the help of walker. At the end of 3 months, full weight bearing was allowed and patient had residual pain, without weakness and limp. At the end of 18 months, implant removal was done as patient has persistent pain. She was asymptomatic post implant removal. At the end of 30 months, patient presented with term pregnancy and started having severe pain at both sacroiliac joints. On clinical examination, patient had tenderness over the sacroiliac joints and sacroiliac stress test was positive. In view of impending sacroiliac disruption, it was recommended to go ahead with C-section on elective basis. C-section was uneventful. Post op pain at the sacroiliac joint was managed conservatively with pelvic binder. After 6 weeks postpartum, she was able to do her daily routine activities with some amount of residual pain. After 6 months, she was asymptomatic



Fig-2: CT-Scan picture (axial) showing joint dislocation



Fig-3: CT-Scan picture (coronal) showing bilateral sacroiliac joint dislocation

DISCUSSION

High-energy injuries of the posterior pelvis are associated with different types of posterior pelvic lesions, including sacral fractures, SI fracture dislocations, and spondylo-pelvic dissociations and pure SI joint dislocations. The SI joints maintain strength and alignment through ligaments aligned vertically and through transverse ligaments that create tension, holding the posterior iliac spines to the sacrum [8]. The SI ligaments are among the strongest ligaments in the body, and huge forces are required to disrupt them [9]. SI joint dislocations usually result from high-energy trauma and many patients have associated life-threatening injuries (intra-abdominal injuries, pelvic bleeding). The unique finding in our case is a female sustaining the injury and the injury pattern with a

bilateral SI joint dislocation that was not associated with injuries to the anterior ring. According to Tile [8], bilateral injuries to the posterior pelvic ring are usually caused by severe rotational forces and associated with symphysis disruptions. The exact mechanism that caused this uncommon injury in our patient is not known. We assume, however, that this rare high-energy injury must have been caused by a direct vertical force to the sacrum. This rare injury pattern is difficult to classify within the OTA classification system [10]. We believe that this injury is best described as a 61-C3. 1a [11] injury with the exception that no involvement of the anterior ring was present in our case. Complete disruptions of the SI complex are inherently unstable injuries, and their treatment is challenging. According to previous studies, pure SI joint dislocations carry high longterm morbidity [8].



Fig-4: Immediate post-op radiograph



Fig-5: 1 year postop radiograph

According to Tile [8], indications for surgical treatment of posterior pelvis instability are a posterior-superior displacement of 1 cm or the presence of posterior gap on CT scan. He reported that 60% of the patients with residual long term pain had vertically unstable, unreduced, or malreduced SI joint dislocations [8]. Dujardin *et al.*; [11] stated that incases of pure SI dislocation, an anatomic reduction lessens the chance of a poor outcome and long-term pain. However these investigators and several others [1, 3, 5, and 12] reported that when SI dislocation is associated with sacral or iliac fractures, good outcomes are possible with or without anatomic SI joint reduction. It is thought that fracture healing stabilizes the SI joint. Inpure SI joint dislocation, however, poor reduction can result inpermanent malposition, instability, and

prolonged pain. This happened with our patient. An anatomic reduction and stable fixation of pure SI joint dislocations is believed to be the best approach to minimize longterm disability [11, 13]. After implant removal, our patient conceived and at full term she had intolerable pain which may be due to stretch of healed posterior sacroiliac joints. So an appropriate reduction is a must in young females and a decision about implant removal is still a controversy.

CONCLUSION:

This case is unique in its injury pattern. To our knowledge, a pure bilateral SI joint dislocation, without associated injuries to the anterior pelvic ring in a female has never been reported in the literature. A favorable outcome can be expected by a good anatomical reduction. Timing of implant removal should be planned appropriately according to the patient requirements.

REFERENCES:

1. Carl A, Thomas BA; Bilateral sacroiliac joint fracture-dislocation: a case report. *J Trauma* 1990; 30:1402–1405.
2. Garcia A, del Castillo JR, Martinez J, Gimeno MD, Lopez-Duran L; Bilateral sacroiliac dislocation with intrapelvic intrusion of the lumbosacral spine. *Int Orthop*, 1994; 18(3): 177–179.
3. Hwang SK, Ahn JI; Bilateral fracture-dislocation of the sacroiliac joint: a case report. *J Trauma*, 1991; 31:299–300.
4. Marcus RE, Hansen ST; Bilateral fracture-dislocation of the sacrum: a case report. *J Bone Joint Surg Am*, 1984; 66:1297–1299.
5. O’Keefe RJ, Jones JA, Hurwitz SR; Bilateral sacroiliac joint fracture dislocation requiring late coccygectomy: a case report. *J Trauma*, 1992; 33:793–794.
6. Schroeder KE, Pryor M; Bilateral sacroiliac dislocations in an adolescent: a case report. *Clin Orthop*, 1979; 143:191–193.
7. Stevens KJ, Preston BJ, Hahn DM; Bilateral fracture dislocation of the sacroiliac joint. *Skeletal Radiol*, 1997; 26:556–558.
8. Tile M; Pelvic ring fractures: should they be fixed. *J Bone Joint Surg Br*, 1988; 70:1–12.
9. Friedenber ZB; Dislocation of the sacroiliac joint. *Am J Orthop*, 1966; 8:90–95.
10. Orthopaedic Trauma Association Committee for Coding and Classification. Fracture and dislocation compendium. *J Orthop Trauma*, 1996; 10 (suppl 1):1–154.
11. Dujardin FH, Hossenbaccus M, Duparc F, Biga N, Thomine J.M; Long-term functional prognosis of posterior injuries in high-energy pelvic disruption. *J Orthop Trauma*, 1998; 12(3):145–151.
12. LaFollette BF, Levine MI, McNiesh LM; Bilateral fracture-dislocation of the sacrum: a case report. *J Bone Joint Surg Am*, 1986; 68:1099–1101.
13. Kellam JF; Invited commentary. *J Orthop Trauma*, 1998; 12:150–151.