



## Case Report

# Traumatic posterior dislocation of sacrococcygeal joint: A case report and review of the literature

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## ABSTRACT

**Background:** Sacrococcygeal joint dislocation is very rare. There are seven cases of sacrococcygeal joint dislocation found in the literature; most are anterior, and only one prior case of posterior dislocation was reported involving the mid-coccygeal joint. Here, we report another case of posterior dislocation of the sacrococcygeal joint.

**Case Description:** A 19 year-old female developed acute low-back and groin pain following a fall from the first floor. She was diagnosed with an unstable pelvic fracture along with posterior dislocation of the sacrococcygeal joint. The next day, after being hemodynamically stabilized, she underwent percutaneous fixation of the sacral fracture, while the sacrococcygeal joint dislocation was managed conservatively. Her pain decreased, and she was discharged on the third postoperative day and followed up to 6 weeks.

**Conclusion:** Most sacrococcygeal joint dislocations can be managed conservatively.

**Keywords:** Coccyx, Posterior sacrococcygeal joint dislocation, Sacrococcygeal joint

## INTRODUCTION

The sacrococcygeal symphysis is a fibrocartilaginous joint that connects the apex of the sacrum to the coccyx.<sup>[7,8]</sup> Sacrococcygeal joint dislocation is very rare and usually follows a direct fall onto buttocks. Two types of dislocations are described; the anterior dislocations are more common than the posterior ones; and they can lead to chronic pain. Treatment options include NSAIDs and physical therapy, steroid injections into the joint, coccyx manipulations, tension band fixation, surgical pinning together of the sacrum and coccyx, and coccygectomy. Seven cases of sacrococcygeal joint dislocation have been reported in the literature (e.g., six anterior and one posterior), to this we add another case of posterior dislocation of the sacrococcygeal joint.<sup>[2,3]</sup>

## CASE DESCRIPTION

A 19-year-old female sustained a fall from the first floor of her home. She presented with acute lower back and groin pain. The pelvic X-rays [Figure 1a] showed fractures of the bilateral superior and inferior pubic rami, and a right sacral ala fracture with posterior sacrococcygeal dislocation. The lumbo-sacral-pelvic MRI and CT scans confirmed the sacrococcygeal

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dislocation [Figure 1b and c]. After being hemodynamically stabilized, surgery on the 2<sup>nd</sup> day of hospitalization included sacral fracture reduction and percutaneous fixation with two iliosacral screws. Notably, the sacrococcygeal dislocation was managed conservatively/nonsurgically. Postoperatively, the X-rays were satisfactory [Figure 2], and she was discharged on the 3<sup>rd</sup> postoperative day with minimal tenderness over the coccyx. Six weeks later, she was asymptomatic.

## DISCUSSION

Sacrococcygeal dislocation has no standard treatment guidelines. There are only isolated case reports that show the equal success of conservative<sup>[2,3,5,6]</sup> versus surgical<sup>[1,4]</sup> management [Table 1]. Kanabur *et al.*,<sup>[3]</sup> in 2017, published the case of a 13-year-old female with traumatic anterior sacrococcygeal joint dislocation treated with rectal closed

manipulation; despite partial loss of alignment, she was asymptomatic at 36 postoperative months. Hamoud and Abbas,<sup>[2]</sup> in 2017, presented two cases of sacrococcygeal dislocation, both successfully managed conservatively.

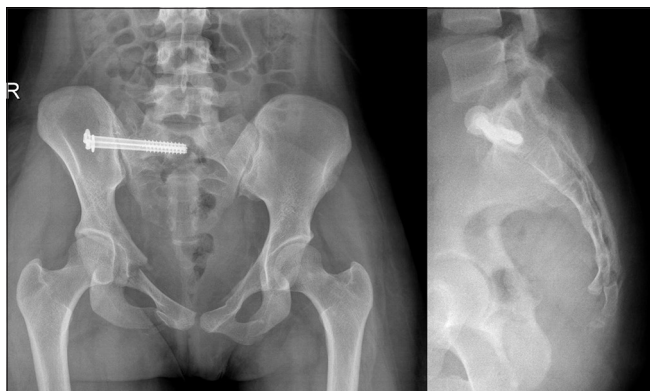
Rijal *et al.*,<sup>[6]</sup> in 2004, published their case of a traumatic anterior dislocation of the coccyx after a fall; they attempted per-rectal closed reduction that was unsuccessful; although they recommended an open procedure, the patient refused, and 8 months later, which was asymptomatic. Kim *et al.*<sup>[4]</sup> reported in 2004 a 31-year-old female whose traumatic anterior sacrococcygeal dislocation was initially managed with manipulation under general anaesthesia; due to difficulty in maintaining the alignment, minimally invasive surgery using a joystick manoeuvre was employed to reduce the sacrococcygeal joint and stabilize it with a smooth 2.4 mm diameter Steinman pin.



**Figure 1:** (a) X-ray pelvis with both hip AP showing bilateral superior and inferior pubic rami fracture with Denis zone 2 fracture of sacrum (b) MRI mid-sagittal T2W image showing posterior sacrococcygeal joint dislocation. (c) CT mid-sagittal view showing posterior sacrococcygeal joint dislocation.

**Table 1:** Review of the literature.

Author	Age/gender	Mode of injury	Ant/post	Management	Follow-up	Outcome
Kanabur <i>et al.</i> , 2017	13 years/female	Fall on stair case	Anterior	Closed manipulation under GA	36 months	Partial loss of reduction
Hamoud and Abbas in 2017	19 years/male	RTA	Posterior (mid-coccygeal)	Observation	16 months	Normal alignment restored
	2 years, 4 months/female	Fall on stair case	Anterior	Observation	5 months	Normal alignment restored
Rijal <i>et al.</i> in 2004	29 years/male	Fall on stair case	Anterior	Closed manipulation under GA	8 months	Closed manipulation failed but patient was asymptomatic
Kim <i>et al.</i> reported in 2004	31 years/female	Fall down on stairs	Anterior	Mini-open reduction, stabilisation with Steinmann pin	6 months	Normal alignment restored
Raissaki and Williamson in 1999	2 years, 6 months/female	Fall on metal rod	Anterior	Closed manipulation under GA	1 week	Partially corrected but patient was asymptomatic
Bergkamp and verhaar in 1995	26 year/female	Fall on staircase	Anterior	Open reduction and dorsal tension band fixation	2 years	Normal alignment restored



**Figure 2:** Postoperative X-ray showing right sacroiliac joint percutaneous fixation and posterior dislocated sacrococcygeal joint.

Here, the authors concluded that fracture–dislocations of the coccyx in young adults could be effectively treated conservatively and avoided performing a closed reduction due to their high failure rates.<sup>[2]</sup>

## CONCLUSION

In this case, a 19-year-old female underwent sacral fracture reduction with percutaneous placed double iliosacral screw fixation, while the sacrococcygeal posterior dislocation was managed conservatively.

## Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Bergkamp A, Verhaar J. Dislocation of the coccyx: A case report. *J Bone Joint Surg Br* 1995;77:831-2.
2. Hamoud K, Abbas J. Fracture dislocations of the coccyx: A case series and literature review. *J Clin Case Rep* 2017;7:1005.
3. Kanabur P, Gowd A, Bulkeley JA, Behrend CJ, Carmouche JJ. Symptomatic sacrococcygeal joint dislocation treated using closed manual reduction: A case report with 36-month follow-up and review of literature. *Trauma Case Rep* 2017;12:11-5.
4. Kim WY, Han CW, Kim YH. Joystick reduction and percutaneous pinning for an acutely anteriorly dislocated coccyx: A case report. *J Orthop Trauma* 2004;18:388-9.
5. Raissaki MT, Williamson JB. Fracture dislocation of the sacrococcygeal joint: MRI evaluation. *Pediatr Radiol* 1999;29:642-3.
6. Rijal K, Pradhan R, Sharma S, Lakhey S, Pandey B. Acute sacrococcygeal dislocation (anterior type): A case report. *Kathmandu Univ Med J (KUMJ)* 2004;2:367-8.
7. Sinnatamby CS. *Last's Anatomy E-Book: Regional and Applied*. Amsterdam: Elsevier Health Sciences; 2011.
8. Standring S, Ellis H, Healy J, Johnson D, Williams A. *Gray's Anatomy*. London: Churchill Livingstone, Elsevier; 2008.

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