

Case report

Isolated Transverse Sacrum Fracture: A Case Report

Cemil Kavalci¹, Huseyin Narci²

1 MD, Associate Professor Department of Emergency Medicine, Baskent University, Faculty of Medicine, Ankara, Turkey.

2 Department of Emergency Medicine, Baskent University, Faculty of Medicine, Ankara, Turkey.

ABSTRACT

Sacral fractures are usually occurs following high-energy trauma. Most fractures of the sacrum are occur in women after age 70 years. Fractures of the sacrum are rare and generally combined with a concomitant pelvic fracture. Transverse sacral fractures are even less frequent which constitute only 3–5% of all sacral fractures. This type of fractures provide a diagnostic challenge. We report an isolated transverse fracture of sacrum in a young man sustained low-energy trauma. The patient presented to our emergency department after several hours of injury, and diagnosed by clinical features and radiography findings

Keywords: *Emergency, sacrum fracture, trauma*

Corresponding author Cemil Kavalci, Assoc. Prof.

*Address: Baskent University Faculty of Medicine, Department of Emergency Medicine Ankara, Turkey.
cemkavalci@yahoo.com*

Introduction

The sacrum fractures are a rare occur fracture. It has been defined usually to the challenge of obtaining diagnostic X-ray but also to the fact that this type of a fracture rarely is suspected (1). A longitudinal fracture of the sacrum can be associated with approximately 45% of pelvic fractures. However, a transverse fracture of the sacrum is even less frequent, and accounted for only 4.5% of sacral fractures in humans (1,2). Sacral fractures have also been described as insufficiency fractures occurring more frequently in patients with risk factors, such as elderly women

with prolonged corticosteroid therapy and pelvic irradiation (2). Lower sacral transverse fracture are often due to direct traumatic force against coccyx, and it is related to fall and resulting in break at the kyphos of sacrum mostly through the body of the lower 4-5 sacral vertebrae. Rarely, neurological deficit may accompany these fractures (2,3). There is often a delay in definitive diagnosis, if the quality of the pelvis X-ray is not adequate and if they are not examined specifically for the lesion. Most neurological results associated with delays in diagnosis (4). We

Discussion

Isolated fractures of the sacrum are rare and generally these occur in combination with pelvic rim fractures (2). Sacral fracture commonly results from high energy trauma. Isolated sacral fractures which occur by shear forces on the pelvic ring are seen less commonly and they are commonly transversely oriented (4). Most fractures of the sacrum occur in women of advanced age. A complete and careful physical, and neurological examination will contribute a definitive diagnosis in suspecting this rare injury. Fracture of the sacrum should be suspected in the presence of low back or sacral pain and tenderness (5). The perianal region, anus, penis, posterior part of the scrotum, and posterior portion of the labia majora are innervated through the fourth and fifth sacral-nerve roots. These are the areas that must be tested carefully to elicit evidence of a sacral fracture (4,5). In the present case,

despite he was young man and sustained low-energy trauma due to fall on a chair, the injury led to a stable sacral fracture associated with lower back pain and sacral tenderness. Transverse sacral fractures have been classified as upper and lower fractures. Lower sacral transverse fractures are often resulting from direct traumatic force. Rarely, it can produce neurological damage (1). The muscles of the lower limb are supplied by multiple peripheral nerve roots, predominantly above the second sacral level. Some of the patients with transverse sacral fractures demonstrate a neurological deficit of importance which mainly concerns the bowel or bladder (1,2). Furthermore, attention should always be paid to the bladder because the neurological deficit may not be apparent immediately after the injury. Lumbalgia, pain of the lower limbs, functional disability of the bladder and bowel, seem due to a

narrowed lumbar canal, a disc-nervous root conflict or a vertebral fracture (2). No neurological deficit in the present case was demonstrated on arrival and during the 6-hour observation in the ED. The coccyx may act as a lever arm on the body of the sacrum. The force so applied is resisted primarily by the ligamentous structures just mentioned. In the present case, the fractured fifth sacral vertebrae, injured by either of the mechanisms pointed out above, was driven forward, resulting in injury to the sacral region (5). Diagnosis is often late, or sometimes is not even made. Standard radiography of lumbosacral region with an adequate quality can be able to predict ordinary degenerative lesions or fracture displacement narrowing the sacral canal in every case, and seem sufficient to make a definitive diagnosis of sacral fractures. A computed tomography of the lumbosacral region is always mandatory to confirm the diagnosis (4). Treatment of transverse

sacral fractures uncomplicated by neurological deficits should be conservative. However, in case of sacral root injuries with displaced sacrum fracture, decompression such as gibeotomy is recommended (1,2). Outcomes of operative decompression are debatable, and even conservative treatment has been advocated (2).

Conclusion

Because isolated transverse sacrum fractures are rarely seen and it can be a challenge of obtaining appropriate radiography, the early diagnosis might be overlooked. The physician should be suspected of this type of fractures in the presence of low back or sacral pain, and tenderness. Treatment is consisted of analgesia, and bed rest.

Conflicts of Interest

None of the authors have any financial or other conflicts of interest related to this manuscript.

Referances

- 1.Urzua A, Marre B, Martinez C, Ballesteros V, Ilabaca F, Fleiderman J, et al. Isolated transverse sacral fractures. Spine J. 2011;11:1117-20.
- 2.Mears SC, Berry DJ. Outcomes of displaced and nondisplaced pelvic and sacral fractures in elderly adults. J Am Geriatr Soc. 2011;59:1309-12
3. Singh H, Rao VS, Mangla R, Laheri VJ. "Traumatic transverse fracture of sacrum with cauda equina injury: a case report and review of literature," Journal of Postgraduate Medicine, 1998;44: 14–15.
- 4.Finiels H, Finiels PJ, Jacquot JM, Strubel D. Fractures of the sacrum caused by bone insufficiency. Meta-analysis of 508 cases. Presse Med 1997;26:1568–73.
5. Robles LA. Transverse sacral fractures. Spine J. 2009;9:60-9