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Indian Journal of Orthopaedics Surgery

Journal homepage: www.ijos.co.in

Case Report

# Bilateral simultaneous femur neck fracture in a young patient due to an episode of seizure: A rare case report

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## Abstract

Bilateral neck fractures are pretty rare injuries that usually happen because of bone diseases, metabolic issues, high-energy trauma, & seizure disorders. When both sides have femoral neck fractures at the same time? That's really uncommon! There are just a few medical papers talking about this type of injury related to seizures. You often read about post-seizure injuries like vertebral fractures or dislocated shoulders. Here, we're sharing the case of a 21-year-old guy who got bilateral neck fractures in his femur after having a seizure at home. He was treated with a single-stage bilateral dynamic hip screw (DHS) operation done from the side on a traction table using a de-rotation screw for the right side. This case aims to make orthopaedic surgeons, neurologists, and emergency doctors more aware of these rare injuries.

**Keywords:** Neck femur fracture, Tonic clonic seizure, Convulsion.

**Received:** 29-08-2024; **Accepted:** 19-11-2024; **Available Online**: 04-04-2025



## 1. Introduction

Bilateral femoral neck femur fracture is a very rare case and is often seen in patients with metabolic diseases like osteomalacia,[1] renal osteodystrophy, after epileptic attacks, electrical shock or trauma. Simultaneous traumatic bilateral neck femur fractures are even rarer and there are very few case reports published where fracture occurred due to a single episode of seizure in a young patient.[6-8] Unilateral fracture neck femur are commonly seen in young adults after high velocity trauma and in elderly patients mainly due to a trivial fall. Bilaterally simultaneous occurrence of fracture neck femur following road traffic accidents and high energy trauma such as fall from a height has been reported in literature but its association with an episode of seizure is very rare.[6,7]

We report here a case of a 21-year-old male who sustained bilateral fracture neck femur following an episode of seizure. (**Figure 1-Figure 3**)

## 2. Case Report

A 21-year-old male showed up at the emergency room of MDM Hospital in Jodhpur after feeling sick with vomiting and a terrible headache. This was followed by a 30-minute seizure that caused pain & swelling in his hips—so much that he couldn't stand on his own! He had been dealing with seizures since 2010 and took medication for it. However, he'd never had such a long seizure before! Before this incident, he had no hip pain or trouble moving around.

During the examination (which is always important!), his legs were found to be turned outwards quite noticeably. The attending doctor noticed some shortening and pain when moving his hips—both actively and passively. X-rays where done and found bilateral intracapsular neck fractures classified as sub-capital & Pauwels type-3 fractures (**Figure 1**). After talking to the neurology team and getting their go-ahead, we planned surgery two days later to fix those pesky fractures with a dynamic hip screw.

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https://doi.org/10.18231/j.ijos.2025.012

For the surgery, we used a lateral technique while the patient laid on a traction table—we had to lift vastus lateralis muscle out of the way, a five-hole DHS with a de-rotation screw was put in place on the right fracture while they used a four-hole DHS on the left side (**Figure 4** and **Figure 5**). After surgery the patient was told he couldn't put any weight on his legs for six weeks and he went home on day six after the operation. He healed nicely and by week six post-surgery, he could walk with aid (**Figure 6**). At two and three months later during check-ups, he said he felt no pain in left side while there is pain in right side and walk with support of walker, on sequential radiographs, radiological union is not present in right side while left side shows union (**Figure 5**)

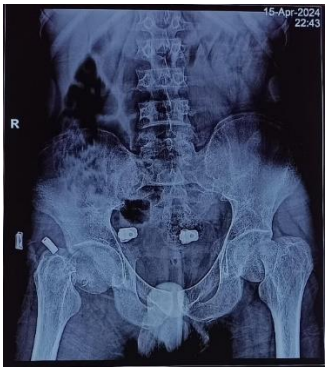


**Figure 1:** Showing preoperative X-ray with bilateral neck of femur fracture

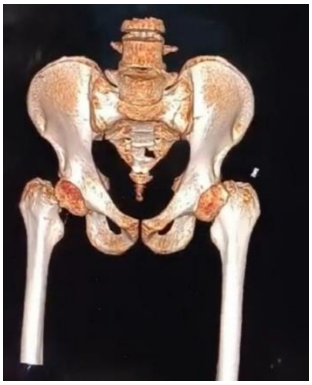

**Figure 2**: Preoperative CT scan

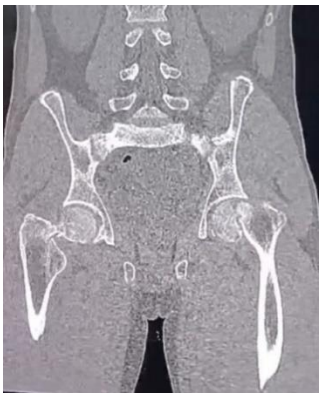

**Figure 3**: Preoperative CT scan

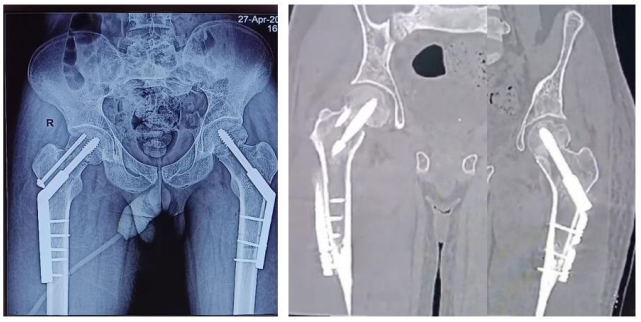


**Figure 4**: Post-operative anteroposterior radiograph following bilateral DHS fixation

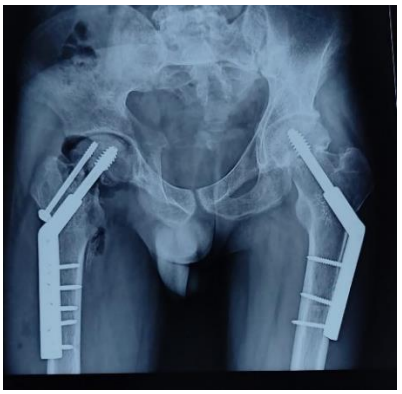

**Figure 5**: 3 months post-operative X-rays

**Figure 6**: Clinical photos of patient after suture removal 1month post op

## 3. Discussion

Bilateral femoral neck fractures don't come up very often in medical writings. Usually, these injuries pop up due to high-speed impacts or falls from high places.[2] Non-traumatic reasons might be things like chronic renal failure or certain

medication use—like steroids and antiepileptics might play a role too! It's rare but possible that someone could have these neck fractures from seizures or even electric shocks.[3]

When young folks suffer from long seizures leading to bilateral femoral neck fractures. That's something you don't see every day! It's more common when people have conditions like osteoporosis or osteomalacia,[10] but our patient had normal bone density! Atkinson et al.,[9] mentioned four cases where severe trauma caused bilateral femur neck fractures: one was from an accident; two happened when heavy things fell; and another because of a fall from height! Taminiau et al.,[5] wrote about cases where violent muscle spasms after seizures caused bilateral neck fractures treated with Smith-Petersen nails. Ribacoba et al,[4] even shared about someone who had both hip dislocation & contralateral neck fracture due to spontaneous seizures. Then Taylor et al.,[3] discussed bilateral femoral neck fractures caused by severe hypocalcemia—they managed it with bilateral DHS procedures too.

The mechanism of injury is that due to powerful and violent contractions of muscles in the proximal thigh during a convulsion, generate forces directed towards the groin causing a fracture around hip joint.[11] Hip fractures resulting from a seizure are more comminuted because of the vigrous muscle contractions, osteopenia and reduced bone mineral density in epileptic patients.[12]

There are many ways you can treat these cases based on age & fracture specifics. Young patients have higher risks such as avascular necrosis from disrupted blood flow around those sites due to missing periosteum in the neck area—which is totally nasty. For younger people like our case study patient—stabilizing those fractures using cannulated screws or DHS seems best; older patients might go for arthroplasty instead.

## 4. Conclusion

To sum it all up: Bilateral neck femur fractures like the ones arising from seizures are truly exceptional! It's super important for orthopaedic surgeons (& emergency doctors too!) to spot these rare injuries early on—getting it right is key because misdiagnosis could lead to hip joint issues down the line! Even if trauma isn't involved—it's vital to keep this risk in mind for quicker investigation & proper care when needed.

## 5. Source of Funding

None.

## 6. Conflict of Interest

None.

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**Cite this article:** Singh GK, Vaishy AK, Singh D, Kumar P, Gaur A. Bilateral simultaneous femur neck fracture in a young patient due to an episode of seizure: A rare case report. *Indian J Orthop Surg*. 2025;11(1):61–63.