Case 16192

Traumatic isolated medial cuneiform fracture: A commonly missed fracture
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Section: Musculoskeletal system
Area of Interest: Musculoskeletal joint Musculoskeletal system Musculoskeletal bone
Procedure: Diagnostic procedure
Imaging Technique: Conventional radiography
Special Focus: Trauma Case Type: Clinical Cases
Authors: Dr. Manish Malik
Patient: 29 years, male

Clinical History:

A young man presented in the casualty department following a road traffic accident with difficulty in walking and pain at the dorsum of the right foot.

Imaging Findings:

AP & lateral radiographs of the right foot showed no obvious fracture. CT of the axial, coronal & sagittal sections of the right foot showed an undisplaced fracture of the medial cuneiform bone.

Discussion:

Traumatic as well as stress-induced isolated medial cuneiform fractures are rare [1, 2]. Only few cases have been reported in the literature [3]. They are commonly associated with metatarsal injuries, such as Lisfranc dislocation fractures and other tarsal bone fractures. The mechanism of injury is usually direct blow or axial load through the foot.

The patient usually presents with pain, swelling, restricted movements and difficulty in walking. Isolated medial cuneiform fractures may be easily overlooked on plain radiographs especially in emergency services. Non-displaced, nondislocated fractures are even more difficult to diagnose on radiographs [4]. In our case, the patient presented with right foot pain and swelling following a road traffic accident. Initial radiographs showed soft tissue injury with no obvious fracture. The patient visited the orthopaedic OPD after 5 days with no relief in symptoms. Local examination reveals tender medial aspect of the right mid-foot. CT was advised to rule out any underlying fracture. CT shows an isolated medial cuneiform fracture. Cross-sectional imaging like CT or MRI should be considered in cases of persistent symptoms and high clinical suspicion of fracture.

Computed tomography or magnetic resonance imaging is helpful in diagnosing the isolated medial cuneiform fracture and guiding further management.
Patients can be treated conservatively with no weight bearing activity for two to four weeks without immobilisation. As mid-tarsal joint has limited movements; complications are infrequent and include non-union. In differential diagnosis bipartite medial cuneiform can be considered [5].

Take home message:

CT or MRI should be done in trauma cases with high clinical suspicion of fracture but normal radiographs to rule out underlying injury.

Written informed patient consent for publication has been obtained

**Differential Diagnosis List:** Isolated medial cuneiform fracture, Bipartite medial cuneiform, Lisfranc fracture dislocation

**Final Diagnosis:** Isolated medial cuneiform fracture

**References:**

Wilson PD (1933) Fracture and dislocations of the tarsal bones. South Med J
Figure 1

Description: Lateral radiograph right foot show no obvious injury. Origin: Manish Malik, Ganesh diagnosis and imaging centre, New Delhi, India.
Description: AP radiograph shows no obvious injury. Origin: Manish Malik, Ganesh diagnosis and imaging centre, New Delhi, India.
**Figure 3**

Description: CT axial section shows isolated medial cuneiform fracture. **Origin:** Manish Malik, Ganesh diagnosis and imaging centre, New Delhi, India.
Description: CT coronal section shows fracture of the medial cuneiform bone. Origin: Manish Malik, Ganesh diagnosis and imaging centre, New Delhi, India
Description: CT sagittal section shows fracture of the medial cuneiform bone. Origin: Manish Malik, Ganesh diagnosis and imaging centre, New Delhi, India