

Case Report

A fracture of OS trigonum: a rare case report

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ABSTRACT

Fractures of os trigonum is an extremely rare event. It is one of the accessory ossicles of the foot found in about 7 % of the population. Very few cases have been reported in the literature about a fracture of the ostrigonum. We present a case of fracture of ostrigonum with associated fracture of the fibula and a large lacerated wound in the leg, in a young man sustained due to road traffic accident. The initial radiological examination with Xray ankle showed a doubtful fracture of posterior process of talus but was not clear. The diagnosis was clinched by CT scan of the ankle with 2mm cuts, which showed clearly a fracture of the os trigonum. It was treated by flap cover for the wound and plaster immobilisation for the fracture. So, any doubtful fracture near the posterior process of talus should be fully assessed radiologically with a CT scan to guide in the treatment.

Keywords: OS trigonum, Talus, Posterior process, Fracture

INTRODUCTION

OS trigonum is one of the accessory ossicles of the foot due to failure of fusion of a secondary center with the main bone of talus.⁶ Fracture of this bone is extremely rare event. To the best of our knowledge very few cases-less than ten, have been reported in the literature.¹⁻³

CASE REPORT

A 30-year-old man presented to our emergency department with history of road traffic accident-he was a two-wheeler driver hit by a speeding car and he was thrown out and landed on his right leg. His vitals were stable. He had a deep lacerated wound on the anteromedial aspect of his right leg (Figure 1) with swelling around his ankle.

All movements of ankle, particularly plantar flexion was extremely painful. X-rays revealed comminuted fracture of shaft of fibula at mid third distal third junction with a

fracture fragment at the posterior aspect of talus. (Figure 2-4).



Figure 1: Clinical pictures.

To clarify the nature of the fragment a CT scan was taken and axial, and sagittal cuts revealed a fracture of the ostrigonum-which is extremely rare (Figure 5-10). He was

treated by wound debridement and flap cover and short leg plaster of Paris slab.

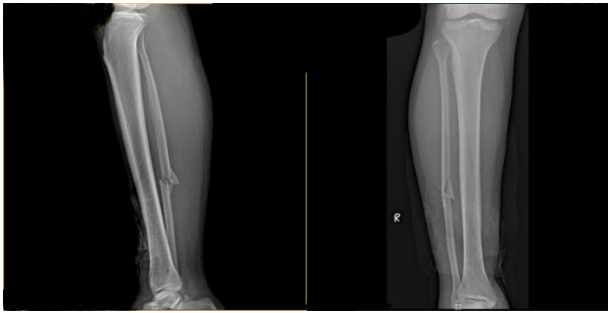


Figure 2: X-ray leg showing fracture fibula.



Figure 3: X-ray R ankle-no obvious fracture.



Figure 4: X-ray R ankle-showing fracture of ostrigonum.

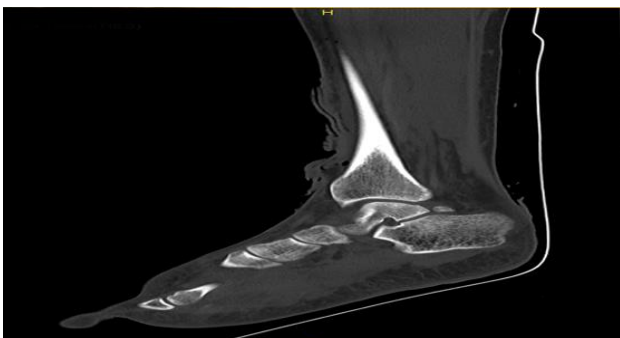


Figure 5: X-CT scan-sagittal image.

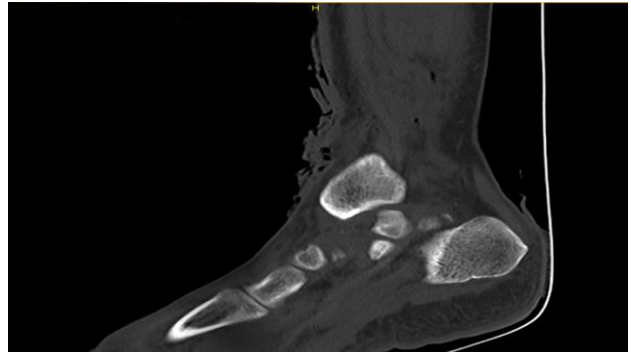


Figure 6: X-CT scan-sagittal image showing fracture of ostrigonum.

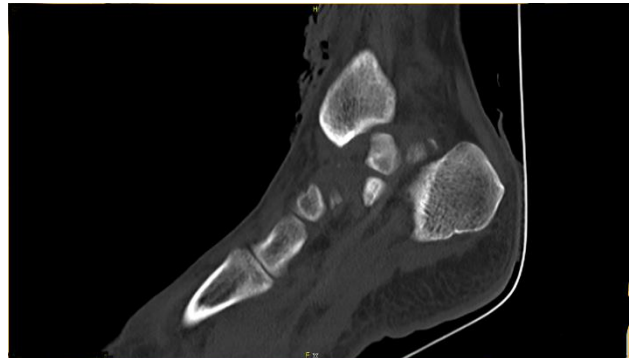


Figure 7: CT scan showing fracture ostrigonum.

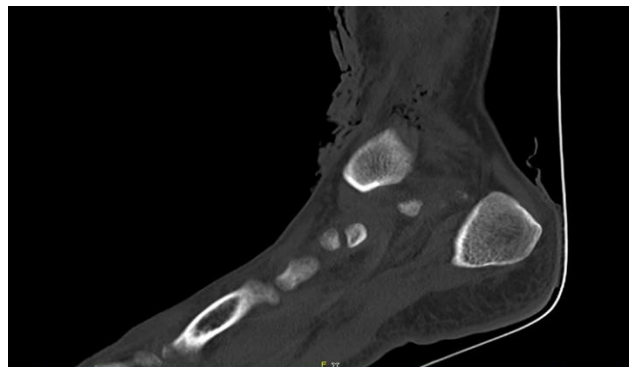


Figure 8: CT scan-sagittal image showing fracture ostrigonum.

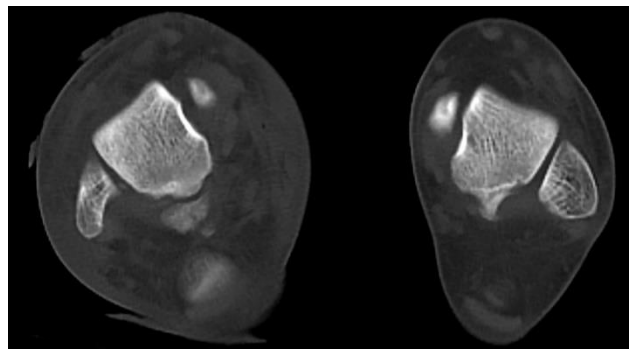


Figure 9: CT axial image showing fracture ostrigonum.

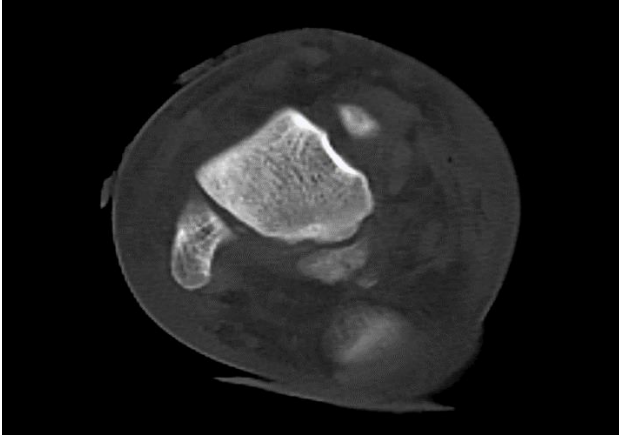


Figure 10: CT axial image showing fracture os trigonum.

DISCUSSION

Os trigonum is one of the ossicles of the foot and found in about 7 percent of the population and in some cases can be bipartite or fragmented.⁶ It appears between 8 to 11 years as secondary center of ossification and fuses with the posterolateral tubercle of talus within one-year appearance. If it fails to fuse it is known as an os trigonum. In such cases it is connected to the lateral process of talus by a fibrous band. Some people may develop os trigonum syndrome where there is pain in posterior ankle triggered by injury or by repeated pointing of toes downwards like ballet dancers any forceful plantar flexion of toes.^{5,6} But a fracture of os trigonum is extremely rare and very few cases have been reported in the literature.¹⁻³ To our knowledge less than ten cases have been reported worldwide. The mechanism of injury is forced plantar flexion where the os trigonum is crushed between the posterior malleolus of tibia and the tubercle of calcaneum.⁴ In our patient clinical signs include a large lacerated wound in the anteromedial aspect of leg and swelling around the ankle with tenderness over the posterior part. Plantar flexion was extremely painful. X-ray showed a doubtful fracture of the posterolateral process of talus. But CT scan revealed a fracture of the os trigonum.

Such fractures are easily missed in routine X-ray of the ankle and may be source of persistent pain. It may be mistaken for fracture of the posterolateral process of talus or simply as os trigonum syndrome. CT scan with axial and sagittal cuts, with 2 mm cuts, will clinch the diagnosis and help in differentiating between an os trigonum fracture and

fracture of posterolateral process of the talus or an os trigonum syndrome. Such fractures usually heal by conservative treatment but a high degree of suspicion is required to detect them. Otherwise it may cause persistent pain in the ankle without proper treatment.

CONCLUSION

Injuries of the hindfoot should be carefully assessed clinically and radiologically. If there is any suspicion or a doubtful fracture near the posterior process of talus, or if there is an unfused os trigonum with pain and tenderness in the hindfoot, a CT scan with at least 2 mm cuts should be taken to avoid missing a fracture in the os trigonum. Such fractures do well with conservative management with immobilisation with splints like plaster of Paris. But if missed and not properly immobilised, they may cause persistent pain in the hindfoot and morbidity.

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