



PURE ANKLE DISLOCATION: A RARE INJURY

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INTRODUCTION/ OBJECTIVE

Ankle dislocation without associated fracture, also known as pure ankle dislocation, is an extremely rare injury. The incidence accounted for 0.065% of all ankle injuries and 0.46% of all presentations with an ankle dislocation.

The mechanism of the injury generally consists of high-energy trauma which is associated with a combination of plantar flexion and inversion or eversion of the foot.

We present a case of a 22-year-old male patient who sustained a closed pure ankle dislocation after a fall from a small height. He was treated conservatively with closed reduction and circumferential cast immobilization for six weeks, followed by a functional rehabilitation program.

METHODS AND MATERIALS

The patient presented to the emergency department with an acutely painful and deformed right ankle after falling from a height of 1 m (stairs).

Radiographs showed a posteromedial ankle dislocation without fracture. Urgent closed reduction of the dislocation was performed and a posterior below-knee back slab was applied to immobilize the ankle. Dorsalis pedis and posterior tibial arteries were intact.

Check X-rays confirmed proper reduction of the ankle joint. Post reduction computed tomography (CT) scan did not show any associated fractures. Magnetic resonance imaging (MRI) revealed a multiligamentous ankle injury and a small osteochondral lesion of the anteromedial talar dome.

The back slab was changed to a below-knee circular cast two weeks later, as soon as the soft tissue swelling subsided. The cast was removed at the six week follow-up.

Recommended physiotherapy was started in order to gain functional rehabilitation. The type of physiotherapy was ankle range of motion (ROM) exercises and peroneal muscle strengthening. At six weeks, the patient started full weight-bearing as tolerated.

At the final follow-up (12 months), the ankle ROM was the same as the pre-injury status, without pain or any impingement in the clinical examination and he was able to return to his work. It was considered that the osteochondral lesion had healed because the patient did not report any symptoms (pain) and we did not use MRI to evaluate the osteochondral lesion healing.

RESULTS

CONCLUSIONS

Pure ankle dislocations are extremely rare in adults. The contemporary literature reports only case reports and small case series. Early diagnosis and appropriate treatment are of paramount importance in order to achieve satisfactory outcomes. We agree with other authors that the proper conservative treatment provides good results in the majority of patients.



FIGURE 1: Posteromedial pure ankle dislocation. Anteroposterior and lateral radiographs.



FIGURE 2: Post reduction radiographs of ankle.



FIGURE 3: Post reduction CT scan of ankle was used to exclude associated fractures.

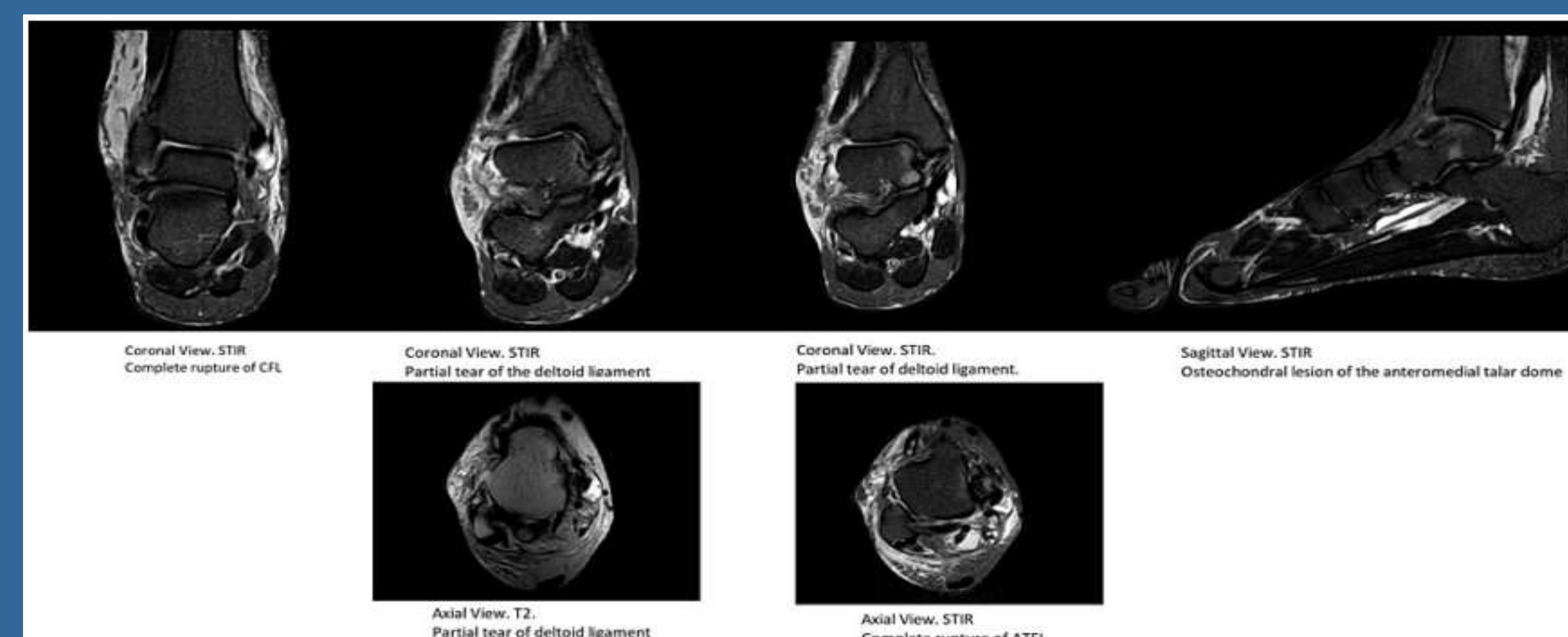


FIGURE 4: Post reduction MRI revealed a multiligamentous ankle injury without associated fractures. The osteochondral lesion of the anteromedial talar dome.



FIGURE 5: Plain X-rays at six-week follow-up.

REFERENCES

1. Fernandes TJ. Themechanism of talo-tibial dislocation without fracture. J Bone Joint Surg Br 1976;58:364-5.
2. Lui TH, Chan KB. Posteromedial ankle dislocation without malleolar fracture: a report of six cases. Injury. 2012 Nov;43(11):1953-7. doi: 10.1016/j.injury.2012.07.002.
3. Wight L, Owen D, Goldbloom D, Knupp M. Pure Ankle Dislocation: A systematic review of the literature and estimation of incidence. Injury. 2017 Oct;48(10):2027-2034.
4. Gan TJ, Li YX, Liu X, Zhang H. Pure Ankle Dislocation Without Associated Fracture: A Series of Cases and Our Clinical Experience. Indian J Orthop. 2022 Jun 27;56(8):1370-1377.

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