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Case Report

Stress Fracture of the Medial Pylon: A Case Report in an Elderly Woman

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Abstract

Introduction

Stress fractures in the ankle area are often seen in young athletes and exceptionally in older people.

Case Report

We present a case of an insufficiency fracture of the medial tibial pilon in an osteoporotic elderly woman resulting from a minor trauma, a case not previously reported.

Conclusion

This type of fracture in the medial area of the ankle should be carefully evaluated so as not to confuse a fracture of the malleolus with that of the medial tibial pilon and can be treated non-surgically.

Introduction

Stress fractures are common injuries that occur in diverse areas of the skeleton. This particular type of fracture has been called as fatigue or insufficiency. The fatigue fracture occurs in the presence of normal bone

structure; it is usually seen in athletes or military recruits, with an incidence of 0.12 % to 4.4 %. On the contrary, in the insufficiency type, bone tissue is abnormal and load is normal, but its origin is multifactorial. The most common locations of these fractures are: vertebrae, sacrum, pelvis, femoral neck and metatarsals. There are no reports of stress fractures of pilon. So, we report a case with medial pilon tibial insufficiency fracture in an elderly patient with osteoporosis on conservative treatment [1-3].

Case Report

A sixty-eight-year old female with acute pain in the right ankle. Pain appeared suddenly when descending a step while walking, in the medial aspect of her right ankle. The initial clinical and radiologic evaluation was reported as normal. Due to persistence of pain, a second evaluation reported a stable fracture with partial immobilization (splint). A month later, at our institution, an insufficiency medial pilon fracture was entertained. Since a shear line was vertically oriented towards the tibial plafond and based on the AO/ASIF classification, we considered this fracture as a pilon fracture 43B1 (Fig.1) [4]. Her past medical history revealed that pain had been at the site for at least two weeks prior to the exacerbation of the symptom. In addition, she had hyperinsulinism, thyroid disease treated with medication and primary osteoporosis treated with strontium ranelate. Menopause at age 48, one pregnancy and 3 abortions. No smoking. Regular exercise: walking one hour daily for a long time. She was treated conservatively with satisfactory evolution.

Figure 1: *Radiological study. Thin arrows show the shear fracture line, the thick arrow shows the angle between the malleolus and the tibial plafond, the circle that it ends in fracture at the tibial plafond not in malleolar angle*

Discussion

Fractures due to insufficiency have very particular characteristics and occur in osteoporotic bone. It is possible that it starts with pain in the area some time ago and worsened by a minor trauma (descend a step) and that the first images do not reveal any pathology, which is why we have resorted to studies with nuclear medicine (Tc99) or magnetic resonance imaging to diagnose them more clearly [5].

In the X-ray that we show (Fig), it is evident how the fracture line starts immediately above the medial malleolus and goes obliquely towards the tibial pilon. For that reason, it is concluded that it is a medial tibial pilon insufficiency fracture.

It is unfortunate that we have not been able to perform a Computed Tomography which would have allowed us to have a more accurate confirmation.

The non-surgical treatment of stress fractures is usual, but there may be some modalities that may require surgery [6].

The available medical literature provided no evidence of previous case-report of elderly insufficiency or pathological fractures of the medial tibial pilon, whereas the medial malleolus stress fracture accounting for 0.6% to 4.1% of total ankle fractures [7-9].

Conclusion

In conclusion, pathological fractures secondary to osteoporosis can be seen in the medial malleolar area, but the radiological study should be carefully evaluated so as not to confuse a fracture of the malleolus with that of the medial tibial pilon. This particular case was treated successfully in a non-surgical way.

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