

Stress Fracture of the Ulna in a Military Recruit

Nir Hod MD¹, Gil Fire MD¹, Israel Cohen BA¹, Michel Somekh MHA¹ and Tifha Horne MD²

¹Institute of Nuclear Medicine, Medical Services and Supply Center, Israel Defense Force Medical Corps, Israel

²Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv, Israel

Key words: bone scintigraphy, stress fractures, ulna, weight lifting

IMAJ 2006;8:882

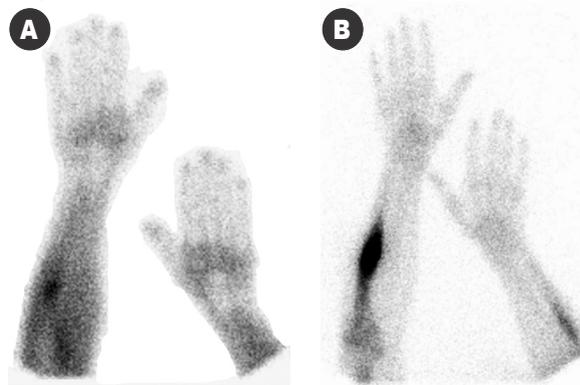
Stress fractures are a common injury in military recruits in the lower extremities due to cyclic load bearing of running or jumping. However, stress fractures are rarely encountered in the upper limbs due to lack of weight-bearing activities. We report a rare case of high grade stress fracture in the ulna.

Patient Description

A 21 year old military recruit presented with increasing right forearm pain of 4 weeks duration. He was not a combat soldier but had been practicing weight lifting as a pastime. Several weeks before reporting to the clinic he significantly prolonged his practice time, and the pain, which was most pronounced during repetitive heavy weight lifting, increased. At his last practice, the pain became so severe that he was no longer able to lift his regular weight.

On examination he had significant tenderness to palpation over the mid-third of the shaft of the right ulna and reported increased pain with a positive fulcrum test to the ulna. X-ray revealed subtle periosteal reaction in the right mid-ulna, but it was not diagnostic. A dual-phase Tc-99m MDP bone scan revealed a fusiform zone of markedly increased tracer uptake along the mid-third of the right ulna and a faintly increased uptake in the proximal left ulna [Figure].

On the basis of the scan and physical examination, the patient was diagnosed as having a grade 4 stress fracture of the right ulna and an asymptomatic grade 1 stress fracture of the left ulna. He was



[A] Early-phase bone scan shows a focal area of hyperemia in the ulnar aspect of the right mid-forearm. **[B]** Late-phase bone scan demonstrates a fusiform area of intensely increased tracer uptake in the mid-third of the right ulna, compatible with highest grade stress fracture. Note the area of faintly increased tracer uptake in the proximal left ulna compatible with low grade stress fracture.

instructed to avoid all weight lifting activities. A follow-up examination 3 weeks later revealed a significant decrease in the forearm pain and no new complaints. The soldier was told to gradually return to full activity and 6 weeks later he was symptom-free.

Comment

Stress fractures are a common orthopedic problem in military recruits or athletes who perform vigorous physical activities. Most stress fractures occur in the lower limbs and are associated with prolonged running and jumping activities. In a review of 320 cases of stress fracture in athletes, all occurred below the level of the pelvis [1]. Stress fractures do however occur in the upper extremities and have

been documented in a variety of sports that exert substantial forces on the bones of the upper extremity, including gymnastics, tennis and competitive rowing. Stress fracture of the ulna is extremely rare, as evidenced by the small number of reports in the literature [2-5]. The cause of stress fracture in this case was cyclic weight bearing. Physicians should be aware of this possibility in the differential diagnosis of pain in the forearm in a patient practicing bodybuilding.

References

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Correspondence: Dr. T. Horne, P.O. Box 6396, Jerusalem 91063, Israel.
email: thorne10us@yahoo.com