Femoral neck stress fracture in a young female recruit: case report

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Introduction
Stress fractures of the femoral neck are rare, representing 5% of all stress fractures, and most prevalent among runners and military recruits. Women seem to be at higher risk. Most of these fractures are undisplaced. Early diagnosis with appropriate imaging in patients with a history of groin pain during training might be crucial in detecting the fractures at early stages. The goal of this paper is to report a case of femoral neck stress fracture in a young female recruit and to highlight the importance of early suspicion of this kind of lesions in military and athlete populations, especially in females, providing the right treatment and avoiding possible complications.

Materials and Methods
A 27-year-old female, who was enrolled in military recruit, reported left groin pain after a strenuous running exercise. After one week taking NSAIDs and without relief, she presented at medical facility. Left hip active and passive range of motion was painful. The patient reported history of amenorrhea that had started a few weeks after the onset of the recruit. An X-Ray was performed, and interpreted as normal, but MRI and CT scans revealed a nondisplaced compression-type femoral neck fracture with fatigue line <50% width.

Results
Female athlete triad was not present. The patient was advised to a six-week period of non-weightbearing, using crutches and restriction from physical activity. The follow-up imaging study revealed union of the femoral neck fracture. At three months, she started light impact activities and seven months after she had no pain and no daily-life limitations.

Conclusion
Stress fractures have been described extensively in the runner as well as military recruit population. They typically involve the lower extremity. Although relatively rare, unrecognized or untreated stress fractures of the femoral neck carry a much higher morbidity rate than other stress fractures. If X-ray is inconclusive, MRI can be useful. Treatment depends on the location and the type of fracture. It is important to keep in mind when evaluating soldiers and athletes who present with activity-related pain that stress fractures are not uncommon and should be given significant consideration.