Osteogenesis imperfecta-induced migratory stress fractures in a military recruit

Sirs,

Osteogenesis Imperfecta (OI) is a genetic, connective tissue and skeletal disorder, which is characterized by bone fragility, osteopenia, a variable degree of short stature and progressive skeletal deformities (1-3). The disorder clinically manifests in a broad spectrum ranging from mild to severe forms. Additional clinical presentations include blue sclera, joint laxity and maturity onset deafness. OI occurs in approximately 1 in 20,000 births and is caused by different quantitative and qualitative defects in the synthesis of collagen I. More than 150 mutations of the COL1A1 and COL1A2 genes, which encode for type I procollagen, have been identified so far (2).

A 19-year-old, previously healthy military recruit presented to our orthopedic clinic with pain in his left foot which appeared after minor physical stress (mainly walking for few days). Based on the physical examination, bone radiographs and a whole body bone scan, a diagnosis of stress fracture of the third metatarsal bone was made. Three weeks later he started to complain of pain in his right thigh, and a stress fracture of the femoral neck was noted. At this stage a systemic illness was searched for, and eventually OI disease was found. His form of the disease was very mild and had not shown any clinical symptoms until that time.

Lately, an association between transient osteoporosis and OI has been reported (4-6), and the authors considered that a stress fracture was the triggering factor. Hence, it is suggested that in certain groups which have a higher tendency to bone fractures such as athletes, military recruits, etc., collagen disease should be looked for prior to their undergoing vigorous training. This is especially important in the recent years due to the development of better genetic studies (2). It is also recommended to perform cost-benefit analyses of such programs.

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References