Pain and osteolysis of the thoracic spine - A case of a rare monostotic fibrous dysplasia manifestation

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Abstract

We describe a case of a young farmer from Central Macedonia, Greece suffering of a mild back pain more than one year. His medical history included hypercholesterolaemia (IIa type) and two episodes of spontaneous pneumothorax of unknown origin two and three years ago respectively. A full imaging survey revealed a single osteolytic lesion at the seventh thoracic vertebra. A CT guided needle biopsy was performed. Diagnosis based on clinical, imaging and histological findings was monostotic fibrous dysplasia of the thoracic spine. We discuss the clinical features and treatment of this non neoplastic condition which may simulate bone osteolytic tumor. Furthermore a possible correlation of concommitant conditions existing in our patient such as the metabolic disorder of hypercholesterolaemia and especially the history of spontaneous pneumothorax episodes with fibrous dysplasia within the spectrum of connective tissue disorder is discussed. Hippokratia 2008; 12 (4): 254-256

Keywords: monostotic fibrous dysplasia, osteolysis, thoracic spine, spontaneous pneumothorax

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Case Report

A 29-year old Caucasian man, farmer from Northern Greece was admitted in AHEPA Hospital because of a mild low and middle back pain lasting more than one year. No history of injury was reported. Generalized fatigue was referred while back pain was worsened during and after working in the farm. The symptoms were relieved after rest and after non-steroid anti-inflammatory agents (NSAID) administration. No morning or after rest stiffness was noticed. On clinical examination, the patient experienced tenderness on the mid -dorsal spine region, spreading to both sides from the lower cervical to lower thoracic level. No skeletal malformations, skin manifestations or neurological signs were noticed. There was a history of two episodes of spontaneous pneumothorax of unknown origin two and three years ago each and of known hyperlipidaemia (IIa type).

Laboratory tests revealed hypercholesterolaemia (cholesterol 350 mg/dl, triglycerides 135 mg/dl, LDL: 290 mg/dl). Inflammation markers (erythrocyte sedimentation rate, C-reactive protein), markers of bone metabolism (Ca, P, alkaline phosphatase, parathyroid hormone), cancer markers (AFP, PSA, CA10, CEA), thyroid hormones levels and immunological examinations (C3, C4, ANA, AMA, ASMA, anti-DNA, p-ANCA, c-ANCA, anti-RNP, protein immunoelectrophoresis) were normal.

A full imaging survey was performed including x-rays of the chest (F + P), the skull (F + P + Town view), the thoracic spine, the pelvis and the long bones without abnormal findings. Computed Tomography (CT) of thoracic spine showed a large lytic lesion of the left transverse process of the seventh thoracic vertebra (Figure 1A, 1B). MR Imaging (MRI) confirmed the CT findings with low signal in T1WI and high signal in T2WI. The bone scanning was not conclusive.

A tissue sample was taken from the T7 vertebra with a CT-guided needle biopsy in order to clarify the nature of the osteolytic lesion. The specimen was embedded in paraffin blocks and stained with hematoxylin-eosin. The histological examination demonstrated spicules of new bone formation with interventing cellular fibrous tissue and calcifications. Immature bone showed no concentricity and was unable to get organized in normal bone (IIa type).

A zone consisted of thin connective tissue surrounded the whole lesion. Atypical cells and in general indications of malignant change were not found. According to clinical, imaging and histological findings a differential diagnosis between non-ossifying fibroma, neurofibromatosis, fibrous dysplasia (FD) and fibrosarcoma was performed whereas the final diagnosis was monostotic FD with a single manifestation at the thoracic spine.