Monostotic fibrous dysplasia of the thoracic spine

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Abstract
Monostotic Fibrous Dysplasia of the thoracic spine is a rare condition. The present case is a 17-years old female patient with involvement of the 11th thoracic vertebrae and believed to be the sixth published case of Monostotic Fibrous Dysplasia of the thoracic spine.
Introduction
Fibrous Dysplasia is a benign process, probably of malformative nature, characterized by the presence of whirling connective tissue with immature laminar bone. It was first described by Lichtenstein in 1938. Later on Lichtenstein and Jaffe, published two different types of Fibrous Dysplasia: monostotic and polyostotic. The polyostotic form have been reported to affect the spine frequently whereas monostotic involvement is rare.

Case-Report
This 17-years old white female patient, had a history of 3 months of back pain. Her physical examination revealed only pain in her back at the thoracic area extending to the thoracolumbar region. The cervical and lumbar spine were clinically intact with a normal range of motion. The neurological status was normal. X-Ray showed a lytic lesion at T 11 without associated spinal deformity. The Tc 99 MDP bone scan showed an uptake at T 11 level. A Computed Axial Tomography demonstrated an expanded and lytic lesion with involvement of the vertebral body and posterior elements specially the left pedicle of the 11th thoracic vertebra (Figure 1) Magnetic Resonance Imaging (MRI) showed involvement of the spinal canal and expansion of the tumor to the T10 foramen with displacement of the spinal cord to the right (Figure 2) (Figure 3) A needle biopsy was done twice, obtaining an abundant bleeding material thought to be an Aneurismal Bone Cyst. The first operation was done by the posterior approach in which tumoral resection, spinal canal release and instrumentation with fusion from T7 to L2 were done. Histopathological examination of the obtained specimen reached the final diagnosis of a cystic type of Fibrous Dysplasia (Figure 4) The second operation was done one week later by the anterior approach with resection of the vertebral body of T 11 and spinal stabilization and fusion with autologous rib strut grafts. The patient was discharged from the hospital 14 days after her first operation with a TLSO brace. She is in now the twelfth postoperative month, neurologically intact, free of symptoms and doing a normal active life, without any complication up to the present report.

Discussion
There are only few reports of monostotic Fibrous Dysplasia with vertebral involvement in the literature. Oba et al. published the fifth case of monostotic FD at the thoracic spine (T10) in a 48 years old woman [5]. Troop and Herring reported a case of monostotic Fibrous Dysplasia in the lumbar spine with involvement of the vertebral body and the posterior elements [7], and Chow et al described another patient with involvement of the transverse process of L4 [2]. Avimadje et al has published a case of a 61 years old woman with compromise at L2 [1]. Only 21 cases of the monostotic type affecting the spine have been described. Guille and Bowen published 3 cases of polyostotic Fibrous Dysplasia with scoliosis [3]. Two of them underwent to "in situ" posterior arthrodesis with a good spinal stability and solid fusion at final follow up. However, Janus [4] reported a patient with thoracolumbar scoliosis who developed a pseudoarthrosis after a 6 years follow up. The present patient might represent the sixth case published in the literature of the monostotic type of Fibrous Dysplasia of the thoracic spine.
Figure 1: A CAT scan showing the involvement of the vertebral body and posterior elements of T11 with an expanded and lytic lesion which mimics an Aneurysmal Bone Cyst.
Figure 2: Weighted T 1 images demonstrating the T 11 lesions and the expansion of them up to T 10 foramen.
Figure 3: Weighted T 1 images demonstrating the T 11 lesions and the expansion of them up to T 10 foramen.
Figure 4: The histological pattern of Fibrous Dysplasia showing the presence of a spindle shaped cells proliferation with regular nuclei and verticillate disposition with calcificated and osteoid trabeculas, fibrohyaline tissue and giants cells areas surrounding little cysts, reaching to the final diagnosis of a cystic type of Fibrous Dysplasia.
References


