Spinal Osteoblastoma In A Pediatric Patient: Case Report With Review Of Literature

R Agrawal, S Chauhan, N Gopal, R Mehrotra

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Abstract

We present a pediatric patient with osteoblastoma of D1 vertebra. Neck trauma occurred 11/2 year before the onset of symptoms. Patient presented with Neck-pain for one-year. Cure was provided by complete surgical excision. We highlight the rarity of the site of occurrence of osteoblastoma and the fact that a radical treatment needs to be performed.

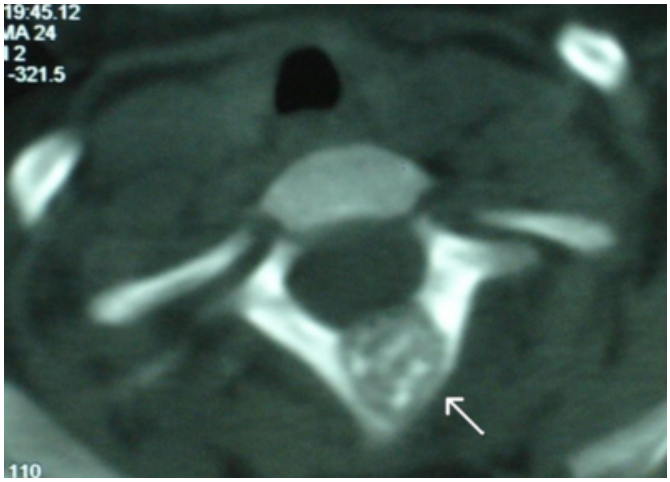
INTRODUCTION

Primary bone tumors are uncommon and only about 12% affect the spine.[1] Benign osteoblastoma is a rare primary bone neoplasm that accounts for <1% of all primary bone tumors.[2] Jaffe and Leichtenstein first gave a review of this tumor in 1956. Young males are commonly involved.[1]

CASE REPORT

We report case of a 3-year old boy who presented with pain in the posterior aspect of neck for one year. Initial treatment with analgesics was successful for 3 months, and then pain progressed gradually unresponsive to analgesics. There was no scoliosis or torticollis. Symptoms of cord compression were absent. There is a history of neck trauma due to fall from bed $1^{1/2}$ year back. Pain and tenderness were present at the same spot where neck got traumatized. Off and on fever was present for 11 months. Routine investigations including hemogram, total and ionized serum calcium and serum alkaline phosphatase were within normal limits. CT scanning of cervicothoracic spine revealed lytic lesion filled with punctate calcifications in left pedicle and adjacent spinous process of D1 vertebra. Soft tissue component causing mild compression over thecal sac posterolaterally on left side was evident. Size of lesion was 1.6 X 1.3 cm (Fig-1).

Figure 1



Laminectomy with removal of adjacent portion of spinous process was done under general anesthesia via posterior approach. Histological analysis revealed well vascularized nidus surrounded by sclerotic bone. The nidus consists of woven bony spicules and differentiated osteoblasts and trabeculae. These spicules were haphazardly arranged and were lined by a single layer of osteoblasts. Multinucleated osteoclastic giant cells were also present. These findings were consistent with osteoblastoma. Pain resolved and patient is symptomless after 5 months of follow up.

DISCUSSION

In 1956, Jaffe and Leichtenstein independently gave a review of a benign tumor of bone, i.e., osteoblastoma. It is a rare tumor mostly seen in children and young adults, with a male-female ratio of 2:1. Mayo clinic reported the largest ever case series on osteoblastoma with 306 cases, spine

being the most common site (32%). In spine, posterior elements are involved mostly.[2]

Pain is the most frequent complaint. Neurologic symptoms are due to extradural cord compression.[3] Scoliosis is present in more than half cases of spinal osteoblastoma.[2] Scoliosis and neurologic complaints other than pain were absent in our patient. Diagnosis may be difficult unless the significance of the association between the pain and neurological deficit is appreciated.[2]

Differential diagnoses include osteoid osteoma, osteosarcoma, aneurysmal bone cyst, unicameral bone cyst and giant cell tumor. It is extremely important to distinguish osteosarcoma from osteoblastoma; and this problem is even more highlighted by the statistical evidence that both neoplasms have an almost equal probability of being localized in the spine.[4]

Patients demonstrate focally increased activity on delayed skeletal scintigrams.[5] CT scan is better than MRI and is the imaging method of choice. It is characterized by a well demarcated translucency with a narrow rim and marginal sclerosis.[6]

Treatment is surgical, either excision in whole if practicable, or thorough piecemeal excision and curettage, with bone grafting of the defect if indicated. Recurrence is due to incomplete removal or histological confusion with low grade osteosarcoma.[1, 2] Our patient also showed no recurrence or relapses owing to complete excision and is well after 15-months of follow up.

Association with trauma may be conincidental.

Pediatric patients with neck pain should be followed carefully as it can be due to a well defined bone neoplasm.

CORRESPONDENCE TO

Ritesh Agrawal 324/6 Katari Tola Chowk Lucknow – 226003 U.P. India E-mail: drriteshagrawal@rediffmail.com Tel. (91) 9839934215

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Author Information

Ritesh Agrawal, M.B.B.S.
Junior Resident in Surgery, MLN Medical College

SPS Chauhan, M.Ch.
Professor in Neurosurgery, MLN Medical College

N. N. Gopal, M.Ch.
Professor in Neurosurgery, MLN Medical College

Ravi Mehrotra, M.D.
Professor in Pathology, MLN Medical College