Giant cell tumor of the upper dorsal spine extending as a huge mediastinal mass, - a challenging case for management

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Abstract: A 25yr old female patient with history of fall, presented to us after 25 days with pain in dorsal spine and unable to walk since fall.

She have complaints of dyspnea for past two days. Patient delivered a healthy child one month back. On examination, tenderness present in upper thoracic spine, trachea shifted to right, sensations were reduced below xiphisternum. Both lower limbs were completely paralysed. Plantar reflex was extensor response. Knee and ankle jerks were exaggerated. No bladder and bowel involvement. X-Ray showed reduction in height of D3 in left side with expansion of posterior part of 3rd vertebra and opacity of upper part of left thorax. CT confirmed tracheal shift, revealed destruction of left half of 3rd thoracic vertebra and posterior1/3rd of third rib. MRI revealed cord compression and extension of mass into left thorax till D7. CT guided biopsy revealed GCT. The blood investigations were within normal limits. A plan for palliative tumor resection with anterior decompression of spine and stabilisation was done.

(A)

(B)

(A)&(B) X-Rays of dorsal spine showing reduction in height of D3 vertebrae
Methods and materials:
Patient was intubated and under general anesthesia patient was positioned prone with pillows in chest and pelvis. Through left posterolateral thoracotomy, chest cavity opened between third and fourth rib. Hard encapsulated mass exposed. Fourth rib osteotomized. After leaving normal rib, tumor in 3rd rib removed and chest wall retracted. Tumor dissection done. Lung was pushed down to the lower thoracic cavity. It was not adherent except for one site which was dissected and repaired; posterior part of second rib was found adherent to the tumor and hence removed while debulking the tumor. D3 body removed along with D3-4 disc, D2-3 disc and lower part of D2.

(H) shows tumor and lung after thoracotomy. (I) shows tumor bed after resection.
Results
Recovery of touch sensation was detected in POD-5. At end of 4 month follow up patient shown recovery of pain and deep touch sensation.

Discussion
Though GCT in thoracic spine occurs in 2-4% of patients, those that extending into thorax as a huge mediastinal mass is extremely rare. GCT of thoracic spine were treated with curettage. Adjuvant radiotherapy is added in case of incomplete removal and recurrent lesions. En bloc resection of spinal tumor carries increased morbidity but considering that the patient is paralysed and dyspneic, we had planned for en bloc resection of tumor and anterior spinal fusion with cemented cage as spacer. Radiotherapy converts the residual tumor to calcified mass which arrests the growth of tumor. The calcified mass may compress the cord. Radiation therapy in high doses may directly damage the spinal cord.

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