En-Bloc Resection of a T4 Chondromyxoid Fibroma Invading the Chest Wall and Thoracic Cavity

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Disclosures

The authors have no financial or organizational relationships with commercial interests or other entities to disclose.
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Introduction

Chondromyxoid fibroma is a benign tumor of bone that represents less than 1% of all bone tumors. It occurs rarely in the spine and the chest wall, and only a handful of cases involving the thoracic spine have been reported in the prior literature. Although benign, this entity is locally aggressive, and for this reason standard surgical management is with en-bloc resection. Neurologic deficit associated with local mass effect in the spine, if present, is generally reversed with en-bloc resection. The patient in this case underwent successful en-bloc resection of a T4 chondromyxoid fibroma extending into the chest cavity.
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Methods

Chart review was performed for this performed for a 44 year old female patient who presented for an incidentally discovered mass originating from the T4 vertebra. Institutional IRB review was not required for this case report.
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Results

The patient is a 44-year-old woman who initially presented for an upper respiratory infection, for which she received a chest X-ray. She had no other symptoms and was neurologically intact on exam. Computed tomography and magnetic resonance imaging done as part of her workup revealed a 10 cm x 8 cm x 7 cm cystic lesion originating at the T4 vertebra. Local spread and displacing the great vessels.
Results

The patient sought a second opinion from several physicians and ultimately underwent a percutaneous biopsy. The biopsy results were suggestive of hemangioma but inconclusive. Due to the possibility of a highly vascular lesion, the patient consented for resective surgery with pre-operative spinal angiogram and embolization. No suitable target for embolization was found, and the decision was made to proceed with en-bloc resection.
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Results

En-bloc resection was performed due to concern that local tumor invasion may compromise the great vessels or thoracic spinal cord. The operation was performed in two parts. The first was performed by the neurosurgery team and the second by thoracic surgery. First was a resection of the T4 pedicle, transverse process, and part of the vertebral body, as well as resection of the fourth rib. Although this required sacrificing the T3 and T4 nerve roots, the thecal sac and neural elements otherwise remained intact.
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Subsequently the thoracic surgery team performed a thoracotomy to separate the anterior extent of the tumor from the thoracic structures. After removal of the tumor, the spine was stabilized using a bilateral screw and rod construct from T1 to T6. Grafton demineralized bone matrix was also used to promote fusion. The patient tolerated the procedure well and has had no known recurrence with several months’ follow up. To the best of the authors’ knowledge, no such case has previously been reported in the literature.
Discussion

Chondromyxoid fibroma is a benign bone tumor generally managed with en-bloc surgical resection, as it is known to recur following intralesional curettage. It may present due to local mass effect, and has previously been described as a rare cause of spinal cord compression. In this case, the lesion was incidentally discovered, but it threatened to not only cause neurologic deficits but also to compromise the great vessels.
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Summary Points

- Chondromyxoid fibroma is rare entity to be considered in the differential diagnosis of a vertebral mass
- En-bloc resection is preferred due to the risk of local recurrence
- Neurologic outcomes in patients with deficits are favorable with en-bloc resection