

Cervical Spinal Chondrosarcoma: A Rare Case Report

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Key Words:

Chondrosarcoma. Cervical spine.
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ABSTRACT:

Cervical spinal chondrosarcoma is an exclusively uncommon disease. A 35-year-old man presented with a history of swelling on the right side of the back of the neck for 1 year and night pain with numbness of the right upper limb for 6 months. Magnetic Resonance Imaging of the cervical spine showed a 7.8×4.5 cm extendible mass lesion involving the spinous process and lamina of the C5-C7 vertebrae. The tumor was excised without stabilization of the cervical spine. After one year of follow-up, the patient is disease-free, and the cervical spine is stabilized with normal movements. A good prognosis is seen when wide excision is done in the case of low-grade chondrosarcoma, even though it is deep-seated.

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Introduction:

Chondrosarcoma, cartilage-forming malignant bone neoplasm, is the third most common primary malignant neoplasm that accounts for 10% of all primary bone tumors.¹ Spinal chondrosarcoma is typically low-grade in nature and accounts for less than 10% of all but commonly affects the thoracic spine followed by the cervical and lumbar spine where males are more affected.² In the head and neck region it is found only 1–12 % of these cases.³ Vital structures in a compact area like the neck make anatomy complex as well as surgical management challenging.⁴ We present a case of cervical chondrosarcoma and its management.

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Case presentation:

A 35-year-old man presented with neck pain that worsened at night, numbness, and swelling over the back side of his right neck. On examination, the swelling was about 5×5 cm, non-tender, hard, fixed with underlying structure, and no sensory and motor deficit. A Computed Tomography (CT) scan of the neck was suggestive of a bone-origin lesion mainly involving the spinous process of the C5-C7 vertebra (Fig C). Magnetic Resonance Imaging (MRI) of the cervical spine revealed a mixed-intensity lesion measuring about 7.8×4.5 cm (Fig A, B). However, a CT scan of the thorax did not reveal any lung metastasis. Piecemeal resection through a posterior

approach was planned under general anesthesia. Despite cutting the lamina of the C5, C6 & C7 vertebrae on the right side preservation of all the vital structures including the facet joint was confirmed. As the facet joint was intact and not involved stabilization was not done (Fig D). Low-grade chondrosarcoma was found in postoperative histopathology (Fig E). The postoperative period was uneventful with early mobilization. At regular 3-monthly intervals, follow-up was advised with clinical examination, CT scan of the neck, and chest X-ray to rule out local recurrence and lung metastasis. A repeat CT scan of the neck taken at the end of 3 months and 1 year showed no recurrence. He was disease-free for a one-year follow-up.

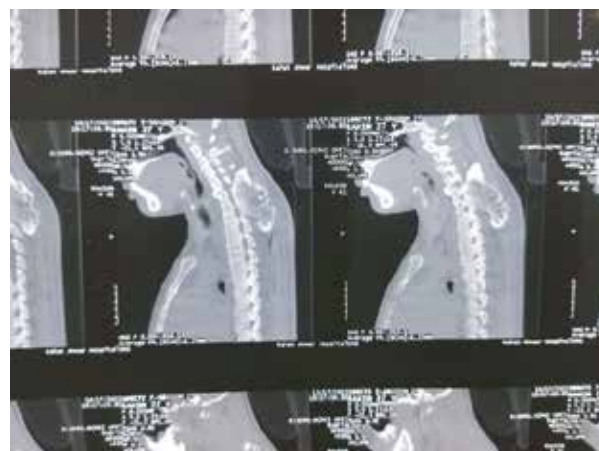


Figure C: CT scan of Cervical spine (Preoperative)

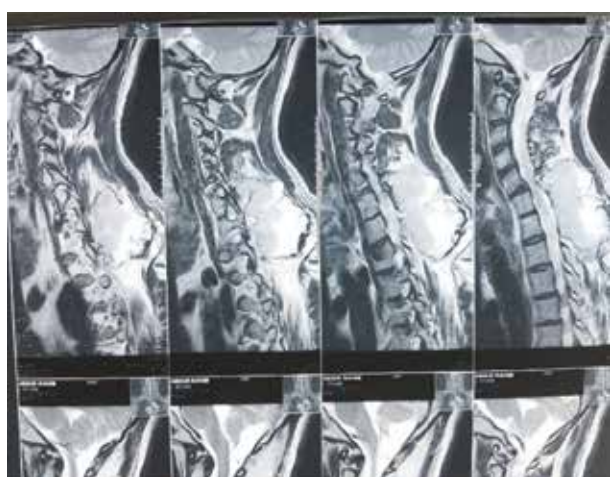


Figure A: T2WI MRI of Cervical spine (Preoperative)

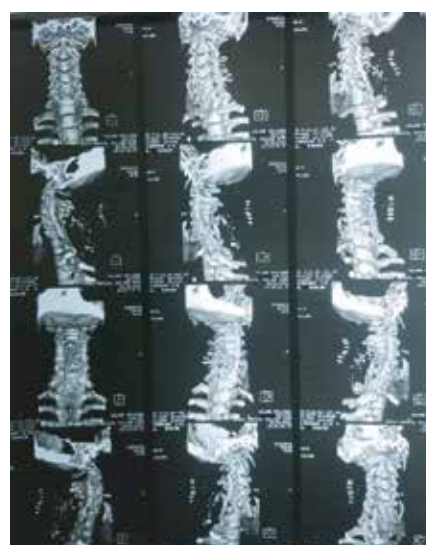


Figure D: CT scan of Cervical spine (Postoperative)



Figure B: T2WI MRI of Cervical spine (Preoperative)



Figure E: Histopathology

Discussion

After osteosarcoma and Ewing sarcoma chondrosarcoma is the third most common primary malignant tumor of bone. Although the incidence of chondrosarcoma in the spine is estimated to be from 2% to 12% where cervical spine is affected least which is only 9%.^{5,6} Presentations of chondrosarcoma patients are with dull aching night pain. Depending on the location physical examination findings vary in a patient with chondrosarcoma. Histologically, chondrosarcoma is classified into conventional & variant types where the variant type is further sub-classified as low-grade clear cell & high-grade mesenchymal variety.^{4,6} As spinal chondrosarcoma is an aggressive tumor, the mainstay of treatment is resection.⁸ When neurovascular structures are involved piece-meal removal is ensured making the margins free from tumor, though the local recurrence is common in that situation.⁹ Radiation and chemotherapy are not beneficial but adjuvant radiotherapy is often indicated in either incomplete surgical clearance or for palliation.^{10,11} The spinal chondrosarcoma prognosis is relatively good with a 5-year survival of 90 % for grade 1, 81 % for grade 2, and 43 % for grade 3 tumors depending on the location, grade, and stage of the tumor.⁵ Structured follow-up is planned either to find out local recurrence or metastasis mostly in lungs.

CONCLUSION

Cervical spinal chondrosarcoma is a rare disease entity. Low-grade chondrosarcoma needs wide surgical excision despite its deep-seated location which is mandatory for a good prognosis and less recurrence. Stabilization of the cervical spine is not always needed.

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