

COMPLEX PRESENTATION OF ANTERIOR CHEST WALL CHONDROSARCOMA

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ABSTRACT

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Chondrosarcoma is the third most common primary bone malignancy, but its thoracic presentation is unusual compared to the pelvis and extremities. Chest wall chondrosarcomas are difficult to be surgically resected due to their proximity to neurovascular structures. We report the case of a 48-year-old man presenting with a history of chest bulging. Computed tomography showed a lesion of approximately 12 cm in the sagittal axis adjacent to the upper lobe of the left lung, compressing the upper lobar bronchus and causing parenchymal atelectasis. Biopsy revealed chondrosarcoma. The lesion extrinsically compressed the left pectoralis major muscle and invaded the left pectoralis minor muscle. After complete surgical resection, the patient was discharged on postoperative day 20.

Keywords: *Chondrosarcoma; Thoracic wall; Thoracic surgery*

MANUSCRIPT

Chondrosarcomas are a group of cartilaginous bone tumors that usually arise in bones with endochondral ossification, such as pelvic and thoracic long bones¹. Chondrosarcoma is the third most common primary bone malignancy, after myeloma and osteosarcoma^{2,3}, but its thoracic presentation is unusual compared to the pelvis and extremities⁴. The most common symptom of patients with chondrosarcoma is insidious-onset, progressive pain, which is present in 95% of patients and described in this report^{2,4}. Chondrosarcomas of the chest wall are difficult to be surgically resected due to their anatomical proximity to neurovascular structures and potentially limited surgical margins⁵. Chondrosarcomas are classified into 3 grades according to the College of American Pathologists (CAP). Tumor grading appears to be the best predictor of clinical behavior³. The grading process is based on cellularity, nuclear size, and nuclear hyperchromasia. Grade II tumors, as presented in this report, are more cellular than grade I tumors, with a higher degree of nuclear atypia and hyperchromasia. Computed tomography (CT) and magnetic resonance imaging (MRI) are important tools for optimizing tumor characterization. The surgical treatment of choice for intermediate and high-grade chondrosarcomas is en bloc excision, whereas for low-grade tumors intralesional curettage associated with adjuvant treatment and cavity filling has shown promising results³. Therefore, we report a complex presentation of an anterior chest wall chondrosarcoma and its en bloc surgical resection.

We describe the imaging findings of a 48-year-old man presenting with a 3-month history of pain on the medial side of the left upper limb and bulging of the left anterior chest wall. Physical examination showed an abnormal volume on the left thoracic wall. Thoracic MRI suggested local invasion of an expansive mesenchymal lesion, measuring approximately 12 cm, 11 cm, and 9.6 cm in the sagittal, vertical, and horizontal axes, respectively, with lobulated contours and well-defined borders. The tumor had an epicenter in the upper and medial juxta-mediastinal third of the left hemithorax. The cranial portion of the lesion determined extrinsic compression of the left innominate vein, with no signs of invasion. On a subsequent CT-guided biopsy, the diagnosis of grade II chondrosarcoma was established according to the CAP classification. CT angiography showed

that the lesion was adjacent to the upper lobe of the left lung, compressing the upper lobar bronchus and the intrapulmonary branches of the pulmonary artery and causing partial parenchymal atelectasis (Figure 1). Also, the lesion invaded the left internal mammary artery and veins. There were no signs of involvement of the aorta, carotid, and left subclavian arteries, but the tumor caused the displacement of medial structures, mainly the aortic arch and the trachea. The lesion extrinsically compressed the left pectoralis major muscle and invaded the left pectoralis minor muscle (Figure 2). The surgical technique used for tumor resection was trap-door thoracotomy. After complete surgical resection (Figure 3), all surgical margins were negative and there were no postoperative complications. The patient stayed 10 days in the intensive care unit and was discharged on postoperative day 20. Postoperative pathology classified the tumor as grade II according to the CAP criteria, with 3 mitoses per 10 high-power fields. In a 12-month follow-up, the patient had no tumor recurrence and no unexpected findings on thoracic imaging.

FIGURES

Figure 1: Thoracic angiography reconstruction.



Figure 2: Axial imaging of the thoracic chondrosarcoma.

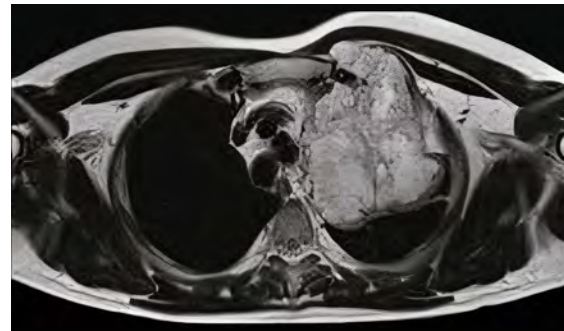
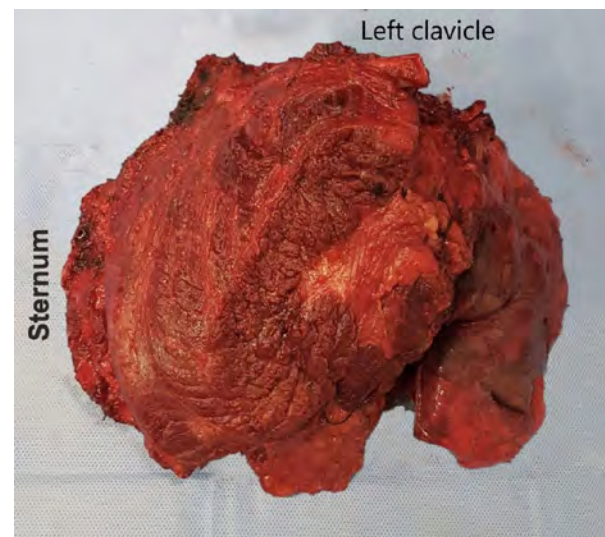


Figure 3: Postoperative anatomical resection – surgical specimen.



Conflict of Interest

The authors declare no conflicts of interest.

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