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Study of two Cases of Laryngeal Chondrosarcomas: Presentation, Management, And Outcomes

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Abstract **Original Research Article**

Laryngeal chondrosarcomas are rare malignant tumors arising in the cartilage of the larynx, posing diagnostic and therapeutic challenges. This study presents two cases treated at Ibn Sina University Hospital in Rabat, Morocco, emphasizing clinical presentations, diagnostic approaches, treatment strategies, and outcomes. Case 1 involved a 56-year-old chronic smoker presenting with inspiratory dyspnea, leading to total laryngectomy. Histopathology confirmed low-grade chondrosarcoma. Case 2 featured a 67-year-old chronic smoker with dysphonia, leading to total laryngectomy with adjuvant radiotherapy for a moderately differentiated chondrosarcoma. Imaging, endoscopy, and histopathology played crucial roles in diagnosis. The discussion outlines the rarity of laryngeal chondrosarcomas, their typical clinical manifestations, and the importance of imaging and histopathology in confirming the diagnosis. Surgical resection remains the mainstay of treatment, with considerations for partial surgery in specific cases. Radiotherapy is limited, while chemotherapy has no curative role. Prognosis correlates with histological grade and the completeness of surgical resection, with a five-year survival rate ranging from 79% to 90%. Recurrences and metastases are infrequent after complete surgery. In conclusion, a multidisciplinary approach involving oncologists, surgeons, and radiotherapists is crucial for tailored management, ensuring optimal outcomes and quality of life for laryngeal chondrosarcoma patients.

Keywords: Laryngeal chondrosarcoma, diagnosis, treatment, histopathology, surgical resection, radiotherapy, prognosis, multidisciplinary approach, rare tumors.

INTRODUCTION

Laryngeal chondrosarcomas are a rare form of malignant tumors that develop in the cartilage of the larynx. Although their incidence is low, it is important to study these cases to better understand the clinical presentation, diagnostic methods, treatment options, and associated outcomes of this rare disease. This paper presents two cases of laryngeal chondrosarcomas, detailing the clinical features, diagnostic approaches, treatment modalities used, and the results obtained.

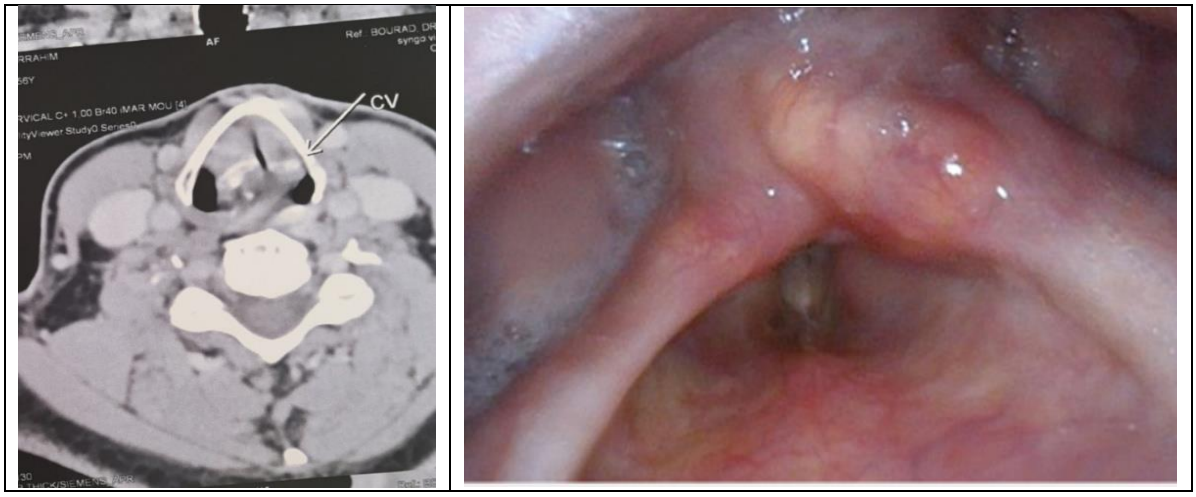
MATERIALS AND METHODS

In this study, we retrospectively examined the medical records of two patients diagnosed with laryngeal chondrosarcomas, treated in our institution. Clinical data, results of medical imaging examinations, histopathological reports, and treatment modalities were collected and analyzed.

RESULTS

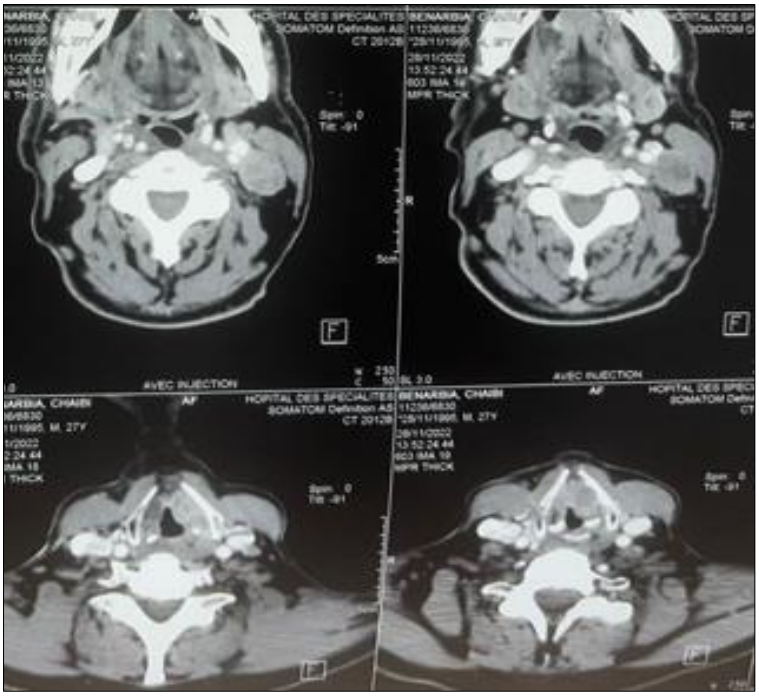
- ***Case 1***

A 56-year-old patient A.E was admitted urgently with inspiratory dyspnea. He was a chronic smoker with a history of 30 pack-years. The onset of symptoms went back to 4 months with the occurrence of dysphonia, complicated by intermittent dyspnea that became permanent. An urgent CT scan revealed an endoluminal tissue mass of the subglottic stage, locally extensive. Direct laryngoscopy confirmed the presence of a cartilaginous tumor. CT imaging showed infiltration limited to the subglottis. The patient underwent total laryngectomy. Histopathological examination confirmed the diagnosis of low-grade chondrosarcoma.



- ***Case 2***

The 67-year-old patient B was admitted to consultation for dysphonia. He was a chronic smoker with a history of 40 pack-years. The nasopharyngoscopy showed an edematous aspect of both vocal cords, arytenoids, and ventricular bands. The CT scan revealed an anterior glottic tumor and left vocal cord with heterogeneity of the left paraglottic space and osteocondensation of the thyrohyoid cartilage in contact with upper jugular and submaxillary left lymphadenopathy. Suspension direct laryngoscopy showed an ulcerative and budding process involving the 2 vocal cords as well as the anterior commissure. An endoscopically guided biopsy confirmed the presence of a moderately differentiated chondrosarcoma (grade 2). The patient underwent a total laryngectomy with bilateral functional laterocervical clearance. The postoperative histopathological examination confirmed healthy margins. The patient was submitted to adjuvant radiotherapy.



DISCUSSION

Chondrosarcoma is a rare cartilaginous malignant tumor in the head and neck, accounting for 1% of laryngeal cancers. It predominantly develops (3/4 of cases) in the cricoid cartilage [1-4]. More rarely, the thyroid (20%) and arytenoid (3%) cartilages are the starting point for this tumor [3-6].

Chondrosarcoma usually occurs in people aged 50 to 70 with a male predominance [2-7]. The usual clinical signs are those of any laryngeal tumor : inspiratory dyspnea, dysphonia, and dysphagia. A cervical mass can also reveal this tumor, especially when it develops from the thyroid cartilage. The slow growth of grade 1 chondrosarcoma explains a very progressive evolution of symptoms and often late consultation.

Imaging allows to specify the nature, location and extensions of the lesion. In CT, the most characteristic image is the presence within the tumor of « popcorn » calcifications found in about 80% of cases [2-8]. The tumor is centered on the affected cartilage and appears hypodense. Contrast uptake is usually moderate. MRI shows a lesion in hyposignal on T1 weighted sequences, and in hypersignal on T2 weighted sequences [6]. If imaging suggests the cartilaginous origin of the lesion, it gives however little information about its benign or malignant nature.

Endoscopy allows for deep biopsies as the lesion develops submucosally. The pathological examination reveals immature chondrocytes with more or less cytonuclear atypia and allows to judge the degree of malignancy of the chondrosarcoma [6-9]. There are three grades of increasing severity. Grade 1 represents 46% of laryngeal chondrosarcomas, grade 2, 49%, and grade 3, 5% [5]. Grade 1 chondrosarcoma has the best prognosis but poses diagnostic problems with chondroma [2-6]. Indeed, the differentiation of these two types of lesions is not always easy histologically. Only the joint analysis of clinical, radiological and histological signs allows to make the diagnosis. In case of doubt about the malignant nature of the lesion, it is generally admitted that a lesion greater than 2 cm corresponds to a chondrosarcoma [4, 5].

The treatment of choice is surgery [2, 5]. It can be done either externally or endoscopically. In all cases, this surgery must obey the rules of cancerology and allow complete resection of the lesion. Grade 2 or 3 chondrosarcomas can be treated by partial surgery as long as the complete resection of the lesion is technically feasible with sufficient safety margins.

Chondrosarcoma is known to be radioresistant and the place of radiotherapy in treatment is therefore very limited. It can however be discussed in case of contraindication to surgery, in front of a lesion deemed non-resectable, or postoperatively in case of incomplete resection [2-6]. On the other hand, for most authors, there are not enough arguments to justify postoperative adjuvant radiotherapy in case of complete resection of the lesion, even for grade 2 or 3 tumors [5]. Chemotherapy has no place in the curative treatment of these tumors [7].

The prognosis of chondrosarcoma depends essentially on the histological grade and the quality of the surgical resection. The overall five-year survival rate varies from 79 to 90% depending on the studies [9, 10]. Recurrences and metastases are rare after complete surgery and occur in 8 to 14% of cases [1-9].

CONCLUSION

Laryngeal chondrosarcomas are rare but significant tumors that require a precise diagnostic and therapeutic approach. The management of these tumors should be individualized according to clinical characteristics, the extent of the disease and functional preservation objectives. Close collaboration between oncologists, surgeons, and radiotherapists is essential to achieve the best possible results in terms of remission and quality of life for patients with laryngeal chondrosarcomas.

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