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Case Study

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CHONDROSARCOMA OF LARYNX: A CASE REPORT WITH REVIEW OF LITERATURE

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ABSTRACT

Background: Laryngeal chondrosarcoma is a rare malignant tumor of the larynx, characterized by its unique clinical presentations and histopathological features. makes up only about 0.2% of all head and neck malignancies and approximately 1% of all laryngeal tumors. **Case Presentation:** We present a case of a 65-year-old male with high-grade chondrosarcoma of the larynx, who exhibited a 2-month history of progressive voice changes without significant systemic symptoms. **Histopathological Findings:** Histopathological evaluation revealed a high-grade chondrosarcoma with pleomorphic nuclei, high mitotic activity, and a cartilaginous matrix. The findings indicated an aggressive tumor behavior, prompting concerns for local invasion and recurrence. **Interpretation and Conclusion:** The clinical presentation, imaging, and histopathological findings in this case align with the literature on laryngeal chondrosarcoma. Compared to other reported cases, the aggressive nature of this tumor underscores the variability in clinical outcomes based on tumor grade and surgical margins.

KEYWORDS: Cartilage, Chondrosarcoma, Larynx.

INTRODUCTION

Laryngeal chondrosarcoma is a rare cancer that develops in the cartilage tissue that lines the larynx, popularly known as the voice box. Historically, therapy choices for sarcomas were limited and gloomy, accounting for less than 1% of cases.[1,2] The cricoid is the most prevalent site of tumor development, followed by the arytenoid, thyroid cartilage, and epiglottis.[1,3] The most common symptoms are dyspnea, hoarseness, dysphagia, odynophagia, and airway obstruction.[1-4] Men are more typically affected than women, and the average age at presentation is in the sixth decade, ranging from 50 to 70 years.[2] It has been discovered to be largely related with hyaline cartilage, with elastic cartilage occurring extremely infrequently.[2]

The larynx is a neck organ that allows humans to breathe, create sounds, and protect our lower airway from obstructions. This delicate structure consists of nine different types of cartilage. When laryngeal chondrosarcoma develops in these cartilages, the tissue gradually expands and weakens the laryngeal skeleton that it is supposed to hold together. Over time, this impairs a patient's ability to speak, eat, and breathe.[1]

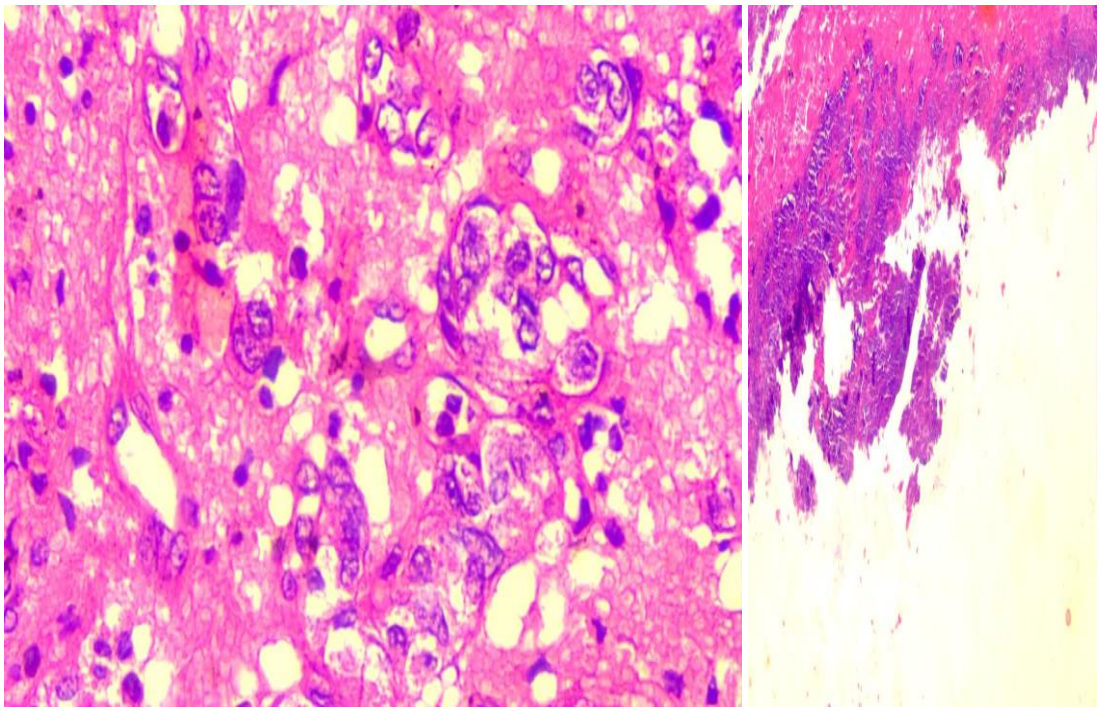
CASE PRESENTATION

A 65-year-old male presented with a primary complaint of a change in voice that had persisted for two months. The patient reported no history of significant weight loss, fever, or other systemic symptoms. Upon physical examination, a laryngeal mass was identified.

Macroscopic evaluation of the surgical specimen revealed multiple pieces of soft tissue measuring 2.5 x 1.5 x 0.5 cm. These pieces were sent for histopathological analysis.

Microscopic examination of the sections showed a junctional area of squamous and columnar epithelium with evidence of ulceration and infiltration by a tumor. The tumor was composed of lobules of round to polygonal cells exhibiting pleomorphic nuclei. Increased mitotic activity was noted, along with foci of necrosis and calcification within the tumor.

The histological features are consistent with grade 3 chondrosarcoma, indicative of a poorly differentiated tumor with aggressive characteristics characteristics.



A& B -Hematoxylin and eosin (H&E) stained sections from the tumor show multiple cellular areas composed of chondrocytes with hyperchromatic nuclei and prominent nucleoli. Grade -3- chondrosarcoma.

DISCUSSION

Laryngeal chondrosarcoma is an uncommon malignant tumor with unique clinical and pathological characteristics. This discussion aims to compare our case of a 65-year-old male with high-grade chondrosarcoma of the larynx with other notable cases reported in the literature, including those by Waters et al.[5], Hernández et al.[6], Potochny et al.[7], and Policarpo et al.[8]

In our case, the patient presented with a 2-month history of voice change without significant systemic symptoms, similar to the 64-year-old male reported by Waters et al., who experienced sudden onset dysphonia.[5] In contrast, Hernández et al. described a 52-year-old male presenting with a longer history (1 year) of progressive dyspnea and dysphonia, highlighting that symptoms can vary in duration and severity.[6] Policarpo et al. reported a 60-year-old male with a slowly progressive dysphonia over one year.[8] This variance in symptom presentation underscores the diverse clinical manifestations of laryngeal chondrosarcoma, which may influence timely diagnosis.

Our patient underwent physical examination and imaging studies, which revealed a laryngeal mass consistent with chondrosarcoma. Waters et al. utilized contrast-enhanced CT to identify a bi-lobed cystic mass associated with the cricoid cartilage[5], while Hernández et al. noted a tumor causing glottic stenosis.[6] In contrast, Potochny et al. reported a low-grade chondrosarcoma with low mitotic activity, suggesting a more indolent behavior compared to our high-grade case.[7] Policarpo et al. described CT findings of a coarse calcification at the cricoid cartilage level, demonstrating that imaging characteristics can vary widely among cases.[8] The variety of imaging findings among these cases highlights the importance of comprehensive imaging for accurate diagnosis and treatment planning.

Histopathological examination revealed grade 3 chondrosarcoma in our case, characterized by pleomorphic nuclei and increased mitotic activity. This finding aligns with Waters et al., whose patient was diagnosed with high-grade chondrosarcoma with local invasion.[5] Hernández et al. reported a grade 2 chondrosarcoma without extralaryngeal extension[6], while Potochny et al. identified a low-grade chondrosarcoma, emphasizing the spectrum of histological differentiation present in laryngeal chondrosarcomas.[7] Policarpo et al. did not specify the tumor grade but reported a tumor that was surgically accessible without infiltrative characteristics, indicating a potentially less aggressive behavior.[8] The difference in tumor grades among these cases may influence prognosis and treatment approaches.

Surgical resection is the primary treatment for laryngeal chondrosarcoma. In our case, the patient underwent complete tumor excision, which included significant surrounding structures due to the tumor's aggressive nature. Similarly, Waters et al. performed extensive

surgical resection, including the right lobe of the thyroid and partial esophagectomy, given the tumor's local invasion.[5] Hernández et al. opted for an emergent total laryngectomy due to airway obstruction, indicating that clinical urgency can dictate surgical strategy.[6] Policarpo et al. performed a glottic-subglottic laryngectomy with preservation of critical structures, suggesting that less extensive surgery may be feasible for cases without significant infiltrative characteristics.[8] The variability in surgical techniques reflects the importance of individual tumor characteristics and patient condition in guiding treatment decisions.

The outcome for our patient remains to be evaluated, but the aggressive nature of grade 3 chondrosarcoma raises concerns for recurrence. In contrast, Hernández et al. reported a successful outcome without recurrence two years post-surgery[6], while Potochny et al. also noted no recurrence after resection of a low-grade tumor.[7] Waters et al. reported involvement at the surgical margin, which may indicate a poorer prognosis, necessitating close follow-up.[5] Policarpo et al. described a patient with no complications and adequate recovery, emphasizing the potential for positive outcomes in carefully selected cases.[8] This variability in outcomes reinforces the significance of histological grade and surgical margins in predicting patient prognosis.

CONCLUSION

This comparison highlights the diverse clinical presentations, histopathological characteristics, and treatment strategies for laryngeal chondrosarcoma. While our case presents an aggressive high-grade tumor, the literature suggests a range of tumor behaviors, emphasizing the need for tailored treatment approaches based on individual patient profiles. The inclusion of Policarpo et al.'s case further illustrates the potential for successful outcomes in less aggressive tumors, underscoring the importance of early diagnosis and appropriate surgical intervention. Further research into the long-term outcomes of these patients is essential to refine management strategies and improve prognostic predictions for laryngeal chondrosarcoma.

REFERENCE

1. New Surgical Procedure to Treat Laryngeal Chondrosarcoma. From: https://www.mountsinai.org/locations/grabscheid-voice-swallowing-center/conditions/laryngeal-chondrosarcoma (Accessed October 2, 2024).
2. Thompson LD, Gannon FH. Chondrosarcoma of the larynx: a clinicopathologic study of 111 cases with a review of the literature. The American journal of surgical pathology, Jul. 1, 2002; 26(7): 836-51.
3. Kozelsky TF, Bonner JA, Foote RL, Olsen KD, Kasperbauer JL, McCaffrey TV, Lewis JE, Grill JP. Laryngeal chondrosarcomas: the Mayo Clinic experience. Journal of surgical oncology, Aug. 1997; 65(4): 269-73.
4. Thompson LD. Chondrosarcoma of the larynx. Ear, Nose & Throat Journal, Sep. 2004; 83(9): 609-.
5. Waters DK, Elliott JA, O'Duffy F, O'Dwyer T. High-grade chondrosarcoma of the larynx: a case report and literature review. Journal of Surgical Case Reports, Aug. 2018; 2018(8): rjy222.
6. Hernández-Brito C, Salazar-Álvarez MA, Álvarez-Bojórquez ME, Cisneros-Juvera FC, López-Gómez J, Elizalde-Méndez Á, Granados-García M. Laryngeal chondrosarcoma, case report and literature review. Int J Surg Case Rep., 2018; 51: 62-66.
7. Potochny EM, Huber AR. Laryngeal chondrosarcoma. Head and neck pathology, Mar. 2014; 8: 114-6.
8. Policarpo M, Taranto F, Aina E, Aluffi PV, Pia F. Chondrosarcoma of the larynx: a case report. Acta Otorhinolaryngol Ital, Feb. 2008; 28(1): 38-41.