Chondrosarcoma of the larynx

Lester D.R. Thompson, MD

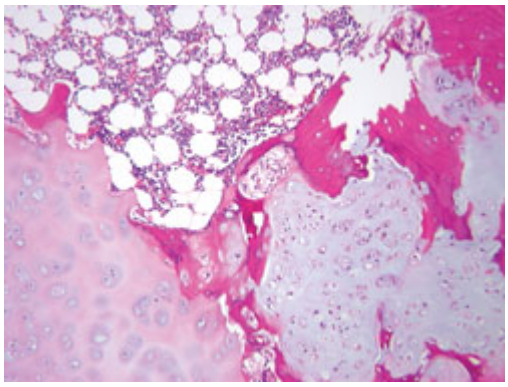

Figure 1. Hyaline cartilage with endochondral ossification is seen (lower left) immediately adjacent to the invasive component of a low-grade (grade 1) chondrosarcoma (lower right). Normal bone marrow elements occupy the upper portion of the field.

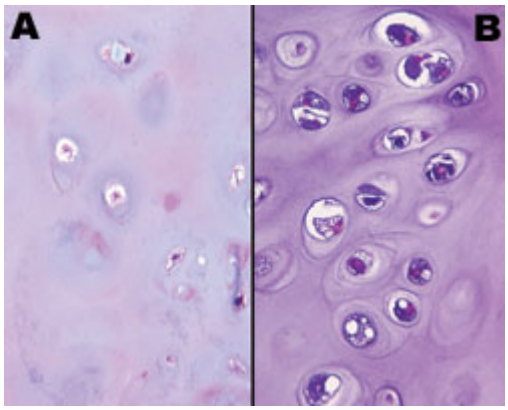

*Figure 2. The cellularity and lacunar size of normal cartilage (**A**) are contrasted with those of a chondrosarcoma (**B**). In a chondrosarcoma, the increased cellularity and atypia are easily identified by binucleation, nuclear irregularities, and increased nuclear size.*

Chondrosarcoma of the larynx accounts for approximately 0.2% of all head and neck malignancies and approximately 1% of all laryngeal malignant tumors, although it is the most common nonepithelial neoplasm of the larynx. Men are affected more frequently than women (3:1 ratio), usually during the middle to later decades of life. Patients present with a variety of symptoms as a result of tumor growth, including dyspnea, dysphagia, hoarseness, airway obstruction, and/or pain.

The tumor most commonly arises within the cricoid cartilage (specifically, the posterior lamina), although the thyroid and arytenoid cartilages are occasionally affected. The tumors arise from hyaline cartilage rather than elastic cartilage. A popcorn-like calcification on radiographic examination is quite common. Macroscopically, the tumors are smooth, lobular, and glistening, and they are “crunchy” when cut. Their mean maximum dimension is 3 cm.

The tumor is made up of lobules of hypercellular atypical chondrocytes in a basophilic cartilaginous matrix material. Lobules of neoplastic cartilage invade bone within the cartilage (figure 1). The cells have a relatively high nuclear-to-cytoplasmic ratio and hyperchromatic nuclei (figure 2). Mitotic figures are not common, and necrosis is infrequent. Based on their cellularity and degree of anaplasia, chondrosarcomas are classified as either low-, medium-, or high-grade tumors. The differential diagnosis includes chondroma, hamartoma, and polyps, although spindle-cell (sarcomatoid) carcinoma can contain metaplastic or malignant cartilage.

Surgical excision is the treatment of choice, either as a wide excision or as voice-sparing surgery. Recurrence is common (20%), but it can be managed with additional conservative surgery until the patient reaches the point where laryngectomy may be the only resort. Patients experience an excellent long-term prognosis, with a 10-year survival rate of greater than 95%.

Acknowledgment
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Suggested reading

Kozelsky TF, Bonner JA, Foote RL, et al. Laryngeal chondrosarcomas: The Mayo Clinic experience. J Surg Oncol 1997;65:269-73.
Thompson LD, Gannon FH. Chondrosarcoma of the larynx: A clinicopathologic study of 111 cases with a review of the literature. Am J Surg Pathol 2002;26:836-51.