Case 3112

Chondrosarcoma of the thyroid cartilage
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Section: Head & neck imaging
Imaging Technique: CT
Case Type: Clinical Cases
Authors: Rottoli ML, Salvadori E, Bianco G, Franchi A, Villari N
Patient: 61 years, male

Clinical History:
A 61-year-old male patient presented with hoarseness and a painless swelling in the anterior aspect of the neck.

Imaging Findings:
A 61-year-old man presented with a history of hoarseness over the past several months, and the presence of a painless swelling, present since 4 years, in the anterior aspect of the neck. A physical examination showed a solid mass located in the region of the right thyroid cartilage wing. A laryngoscopy showed reduced mobility of the right vocal cord. A CT imaging of the neck was performed and plain thin sections (2.4 mm) were obtained, before and after the injection of a contrast medium. This showed a swelling of the right thyroid cartilage, measuring 4x5 cm in dimension, with irregular borders and inhomogeneous appearance, containing calcifications. The mass, which did not reach the median line, compressed the adjacent structures, in particular the vocal cord, which was medially dislocated but probably not invaded, by the lesion. Inferiorly, the lesion reached to the level of the cricoid cartilage. There was no evidence of a cervical lymph node enlargement. The patient underwent a total laryngectomy. A gross examination of the surgical specimen demonstrated the presence of a hard neoformation, measuring 5x4x3 cm in dimensions. The histological diagnosis was that of a Grade 1 chondrosarcoma. The surgical margins, marked with ink, were free of tumour.

Discussion:
A chondrosarcoma is a tumour that may show several histological aspects. A common feature is the abnormal production of cartilage tissue. Most chondrosarcomas occur in patients who are over 40 years of age. Males are more often afflicted than females, by a ratio of 2 to 1. There is no predilection of race. They may be superimposed on a pre-existing enchondroma and, less commonly, on an osteochondroma, a chondroblastoma, fibrous dysplasia or else in Paget disease. According to morphology, chondrosarcomas include 4 variants: clear cell, myxoid, dedifferentiated and mesenchymal. A chondrosarcoma is also graded as being, moderately or poorly differentiated. The well differentiated lesions display moderate hypercellularity, with chondrocytes showing vesicular plump nuclei, with inconspicuous nuclei and few mitotic figures (Grade 1). The poorly differentiated lesions show marked hypercellularity, with giant bizarre cells, and numerous mitotic figures (Grade 3). Grade 2 is an intermediate aspect. A chondrosarcoma occurs in any part of the skeleton; there is a distinct predilection for bones close to the axial skeleton, such as the pelvic and shoulder girdles. A laryngeal location is rare, representing about 1% of all tumours at this site. Laryngeal chondrosarcomas, arising from pre-existing disease, have not been reported. Laryngeal chondrosarcomas are treated by surgical resection, as conservative as possible. If possible, a partial laryngectomy
is performed, but in the case of large lesions, total laryngectomy may be necessary.

**Differential Diagnosis List:** Chondrosarcoma of the thyroid cartilage.

**Final Diagnosis:** Chondrosarcoma of the thyroid cartilage.

**References:**

Description: A CT image of the neck after i.v. infusion of a contrast medium, showing a swelling of the right thyroid cartilage, measuring 4x5 cm in dimensions. Origin:
Description: A CT image showing a swelling of the right thyroid cartilage, with irregular borders, and a inhomogeneous density, containing calcifications. 

Origin:
Description: A CT image showing that the mass has compressed the adjacent structures, in particular the vocal cord. Origin:
Description: A bone window, showing the intratumoral calcifications. Origin:
Description: An image from the histological examination showing moderate hypercellularity with chondrocytes showing vesicular plump nuclei, with inconspicuous nuclei and few mitotic figures.
Origin:
Description: Another histological image, showing a Grade 1 chondrosarcoma. Origin: