CASE STUDY

Stridor as initial clinical presentation of tracheal chondroma

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KEYWORDS
Chondroma; Trachea; Tracheotomy

Abstract Chondromas are benign cartilaginous tumours that are uncommon in the head and neck region. Only few cases of chondroma have been reported in the trachea. We present a 70-year-old patient who presented clinically with severe dyspnoea requiring urgent tracheotomy. An oval, expansive, well-delineated tracheal tumour was evident on magnetic resonance imaging. The mass was removed surgically in its entirety, preserving tracheal rings, and the histopathological diagnosis was chondroma. The patient was decannulated after 2 months, and was followed for 3 years. Urgent tracheotomy is an unusual initial clinical manifestation of this infrequent tumour. Surgical options and the choice of therapy in this case are discussed.

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PALABRAS CLAVE
Condroma; Tráquea; Traqueotomía

El estridor como presentación clínica inicial del condroma traqueal

Resumen Los condromas constituyen tumores cartilaginosos benignos que son infrecuentes en las regiones de cabeza y cuello. Sólo unos pocos casos de condroma se han producido en la tráquea. Presentamos un paciente de 70 años que se presentó clínicamente con disnea, que precisaba una traqueotomía urgente. En la imagen de la resonancia magnética se reveló un tumor traqueal oval, expansivo y bien delineado. La masa fue íntegramente extirpada mediante cirugía, conservándose los anillos traqueales, y el diagnóstico histopatológico resultó ser un condroma. El paciente fue desintubado a los dos meses, realizándose un seguimiento durante tres años. La traqueotomía de urgencia constituye una infrecuente manifestación clínica inicial.
Stridor as initial clinical presentation of tracheal chondroma

Introduction
Chondromas are benign cartilaginous tumors that are uncommon in the head and neck region. Some exceptional cases affecting epiglottis, tongue and larynx were reported. More than 300 laryngeal chondromas and only 20 cases of tracheal chondroma were described till today. Tracheal chondroma was reported most commonly in older males. Mean age was 40–50 years, male: female ratio 5:1. They originate from the cartilaginous rings.

The differentiation between benign and malignant nature of these cartilaginous tumors is not easy. In fact, some reports of chondromas proved to be grade chondrosarcomas.

Case report
A 70-year-old man had a 7-month history of progressive shortness of breath, leading to dyspnoea at rest and prolonged cough without hemoptysis. He was occasionally treated by general practitioner. However, dyspnoea and inspiratory stridor become so prominent that the patient was urgently referred to ENT Clinic and hospitalized as emergency case. Immediate endovideostroboscopy revealed intraluminal tracheal tumor obstructing 80% of the tracheal lumen. A low tracheotomy distal to the lesion was performed. Subsequent magnetic resonance imaging demonstrated oval, expansive, well delineated tracheal tumor obstructing 80% of the tracheal lumen. A low tracheotomy distal to the lesion was performed. Subsequent magnetic resonance imaging demonstrated oval, expansive, well delineated tracheal tumor (diameter 33×19×17 mm) affecting first three tracheal rings of the left side of trachea with near complete obstruction of the lumen. Fat suppressed axial MRI images excluded presence of fat in tumor. No calcification was documented (Figure 1).

Flexible bronchoscopy confirmed a protruding mass, arising from the left lateral wall, covered by normal mucosa. Biopsy was done and histological examination revealed a tracheal chondroma.

Microscopic examination revealed cartilaginous tumor. The fragments of tumor were sparsely cellular with small clusters of chondrocytes in abundant grayish chondroid matrix. The cells within lacunae possessed a single small nucleus. Multinucleated cells, nuclear atypia or mitotic activity were not present.

Because of chronic cardiac insufficiency the patient was prepared cardiologically for operation. In general anesthesia the trachea was exposed anteriorly, and the mass was removed in its entirety preserving tracheal rings. Postoperative course was uneventful.

Histologically, the resected lesion was also hypocellular with abundant chondroid matrix, mainly hyaline, but slightly myxoid, surrounding small clusters of chondrocytes in lacunae. Occasionally, binucleated cells or cells with plump nuclei could be seen, but there was no evidence of nuclear anaplasia and mitosis. No foci of necrosis were present. The histopathologic diagnosis was chondroma (Figure 2).

The patient was decanulated after 2 months, and was followed for 3 years. No signs of tumor growth, or tracheal narrowing were noticed endoscopically and on MRI.

Discussion and conclusion
Chondroma causes progressive narrowing of the tracheal lumen with obstructive symptoms like cough and dyspnoea and finally stridor. Etiology is thus unclear and for a correct diagnosis MRI, endoscopy and biopsy are mandatory.

Figure 1  MRI of tracheal tumor. Preoperative status of tumor (1a—sagittal T1w, 1b—coronal T1w, and 1c—axial T2w). Postoperative status, immediate (1d—sagittal T1w), and after 1 year (1e—sagittal T1w and 1f—axial T2w).
Though MRI plays an important role in the workup of these tumors, but they cannot be used to differentiate between benign and malignant nature of tumor in trachea. It is difficult to distinguish histologically between chondroma and chondrosarcoma, and their similar behavior makes judgment even more problematic. It is important to differentiate the cartilaginous lesions arising in hyaline cartilage (cricoid cartilage, thyroid ala, and body of the arytenoids cartilage) from those starting in elastic cartilage (epiglottis and vocal process of the arytenoids cartilage). Lesions arising from elastic cartilage are composed of small uniform chondrocytes without nuclear abnormalities. This suggests that they represent foci of metaplastic elastic cartilage rather than true neoplasms. In contrast, true cartilaginous neoplasms of the larynx are derived from the hyaline cartilage of the cricoid cartilage, thyroid cartilage and body of the arytenoids. The malignancy is suggested when calcification is identified in tracheal tumor.\textsuperscript{3,4}

Surgery is still the treatment of choice for tracheal cartilaginous tumors. Laser resection can be recommended for the treatment of limited lesions. Laser endoscopic surgery is one of the conservative surgical ways to manage laryngeal chondroma especially in cases of elderly patients with poor health status. It permits adequate removal of the tumor and still maintains structural and functional integrity and preserves possibilities of subtotal or total salvage surgery.\textsuperscript{8,9}

Wide excision with clear margins is usually indicated. Because of the risk of recurrence or malignant transformation tracheal resection is advised for cartilaginous tumors of the trachea. The most common complication of resection is the presence of granulation tissue in the anastomosis region in one third of patients.\textsuperscript{10—12}

The management of cartilaginous tumors should be multidisciplinary and centralized in specific referral centers.\textsuperscript{8}

Unspecific clinical presentation of tracheal chondroma in this case leading to severe dyspnoea that demanded urgent tracheotomy is also rare.

Advanced age of the patient with poor cardiovascular condition were the reasons to perform wide endoluminal tumor removal with preservation of tracheal rings, rather to resect trachea with potential complications. Clinical and radiological follow-up proved that this approach was appropriate.

References