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CASE REPORT

Malignant transformation of a tracheal chondroma: The second reported case and review of the literature

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Abstract Tracheal tumors are rare, representing only 0.2% of the respiratory tract malignancies. Chondrosarcoma arising in the trachea was first described in 1959 by Jackson et al. and since then only 20 cases have been described. We report the second documented case of malignant transformation from an endotracheal chondroma, in a 75-year-old woman, and review the literature.

Introduction

Primary tracheal tumors are rare, 80% are malignant and account for 0.2% of all respiratory malignancies. The most common histologic types are squamous cell carcinoma and adenoid cystic carcinoma, followed by carcinoid tumor, adenocarcinoma, and small cell carcinoma. The remaining tumors are diverse and include chondroma, chondrosarcoma, fibrosarcoma, among others.[1,2] Jackson et al. described the first case of tracheal chondrosarcoma in 1959 and since then only 20 cases have been reported (Table 1).[3–23] We add a new case leading to a review of the literature.

Case report

A 75-year-old woman with a past medical history significant for hypertension, diabetes mellitus and carotid artery disease reported having a chronic non-productive cough and dysphagia for about one year. Six years prior to this presentation, she had undergone endoscopic resection of a tracheal chondroma diagnosed during investigations for multiple episodes of respiratory distress mimicking asthma. No further treatment was done at that time. At presentation, a chest-computed tomography (CT) revealed a mass (25 mm × 30 mm × 25 mm) located in the left posterolateral wall of the mid-trachea without lymphadenopathy

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Table 1 Characteristics of patients with tracheal chondrosarcoma.

N°	Age, Sex	Symptoms, duration (months)	Tracheal segment involved	Size (cm)	Treatment	Recurrence	Follow-up (years)	Authors, year
1	32, M	C, 72	Inf	NR	ER	No	6	Jackson *et al* 1959[3]
2	73, M	D, O, W, 8	Inf	2.5	ER	local	2	Daniels *et al* 1967[4]
3	48, F	C, W, 15	Sup	4	STR	no	5	Fallahnejad *et al* 1973[5]
4	71, M	H, C, D 4	Med	3	STR	no	5	Weber *et al* 1978[6]
5	58, M	D, 24	Inf	2	STR	no	2.5	Slasky *et al* 1985[7] [a]
6	74, M	P, acute	Sup	2	STR	no	1	Arévalo *et al* 1986[8]
7	72, M	H, D, 7	Med	5	ELD and STR	no	0.5	Matsuo *et al* 1988[9]
8	54, M	W, D, 1	Inf	2	STR	local, distant	14	Salminen *et al* 1990[10] [b]
9	64, M	D, 36	Inf	2.3	STR	no	1	Kaneda *et al* 1993[11]
10	72, M	D, 36	Inf	6.5	STR	no	NR	Leach *et al* 1994[12]
11	54, M	W, D, 1	Inf	2	ELD and STR	no	3.5	Kiriyama *et al* 1997[13]
12	84, M	C, D, St, 24	Med	NR	STR	no	3	Hervás *et al* 1997[14]
13	87, M	D,12	Med	3	ELD and RT	local	1	Farrell *et al* 1998[15]
14	49, M	St, D, acute	Sup	NR	ELD and STR	no	4	Aznar *et al* 2001[16] [a]
15	78, M	D, 3	Inf	NR	ELD and STR	no	0.5	Maish *et al* 2003[17]
16	34, M	H, D, 8	Sup	2.5	STR	no	6.3	Umezu *et al* 2008[18]
17	72, M	O, D, W, 12	Sup	NR	ELD and RT	no	7	Mendonça 2009[19]
18	34, M	C, W, D, 18	Sup	2	ER and TSR	no	NR	Wagnetz *et al* 2009[20] [a]
19	35, M	W, D	Sup	NR	ER and TSR	no	NR	Almeida *et al* 2010[21] [a]
20	63, M	W, D, 6	Med	NR	ER and TSR	no	NR	Mirza *et al* 2010[22]
21	74, M	W, D	Sup	NR	TSR	no	NR	Mohajeri *et al* 2013[23]

C, cough; W, wheezing; St, stridor; D, dyspnea; O, orthopnea; H, hemoptysis; P, pneumonia; Inf, inferior; Med, medium; Sup, superior; STR, surgical tracheal resection; ER, endoscopic resection; ELD, endoscopic laser debulking; RT, external beam radiotherapy; NR, not reported.

[a] Grade II condrosarcoma.

[b] Malignant transformation and cause of death.

(Fig. 1). Her physical examination and pulmonary functions tests were normal. Gastroesophagoscopy revealed extrinsic compression at 18 cm from the dental arch, with normal mucosa. Rigid bronchoscopy confirmed the lesion described in CT, which protruded into the tracheal lumen, occupying less than half of its diameter and covered with regular mucosa. After rigid scissors incision, mechanical debridement and laser application restored normal lumen patency (Fig. 2). Histopathological analysis showed cartilaginous tumoral proliferation with increased cellularity and occasional binucleate chondrocytes as well as necrotic remains, in favor of low-grade chondrosarcoma (Fig. 3). The diagnosis was confirmed by the regional referral center for sarcoma. The case was discussed in our multidisciplinary tumor board and the patient deemed unfit for surgery. At present, 9 months after the second endoscopic intervention, the

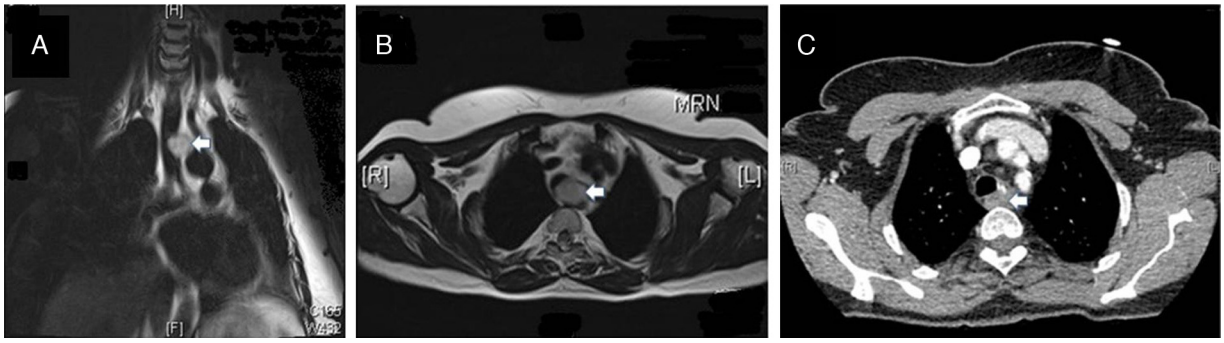

Figure 1 Magnetic resonance imaging showing the tracheal tumor (arrow) in sagittal (A) and coronal (B) planes compressing the esophagus but without invasion. (C) Follow-up chest CT 8 months after interventional endoscopy, demonstrating residual tumor (arrow).