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LETTERS TO THE EDITOR

How to treat a glomus tumor of the airways?

Letter to Editor:

Glomus tumors (GT) of the airways are extremely rare and their biological behavior seems to be benign.[1] Surgical treatment is the most frequently cited intervention,[2] however an endoscopic approach can also be an option in the management of respiratory airway involvement. The authors describe two clinical cases of GT in the large airways treated with endoscopic techniques.

The first patient was a 60-year-old Caucasian non-smoker male admitted to the emergency department with complaints of cough and low-volume hemoptysis. Chest tomography (CT) showed left lower lobe atelectasis (Fig. 1). Flexible bronchoscopy revealed a clot occluding the left lower lobe. Prompt rigid bronchoscopy was performed and showed a highly vascular lesion arising from the antero-medial wall of the entrance of the left lower lobe with almost total occlusion. This lesion was removed mechanically with forceps, showing patency of all the segmental bronchus of the left lower lobe. The histopathological findings presented a monotonous population of round-to-polygonal cells containing round nuclei and eosinophilic

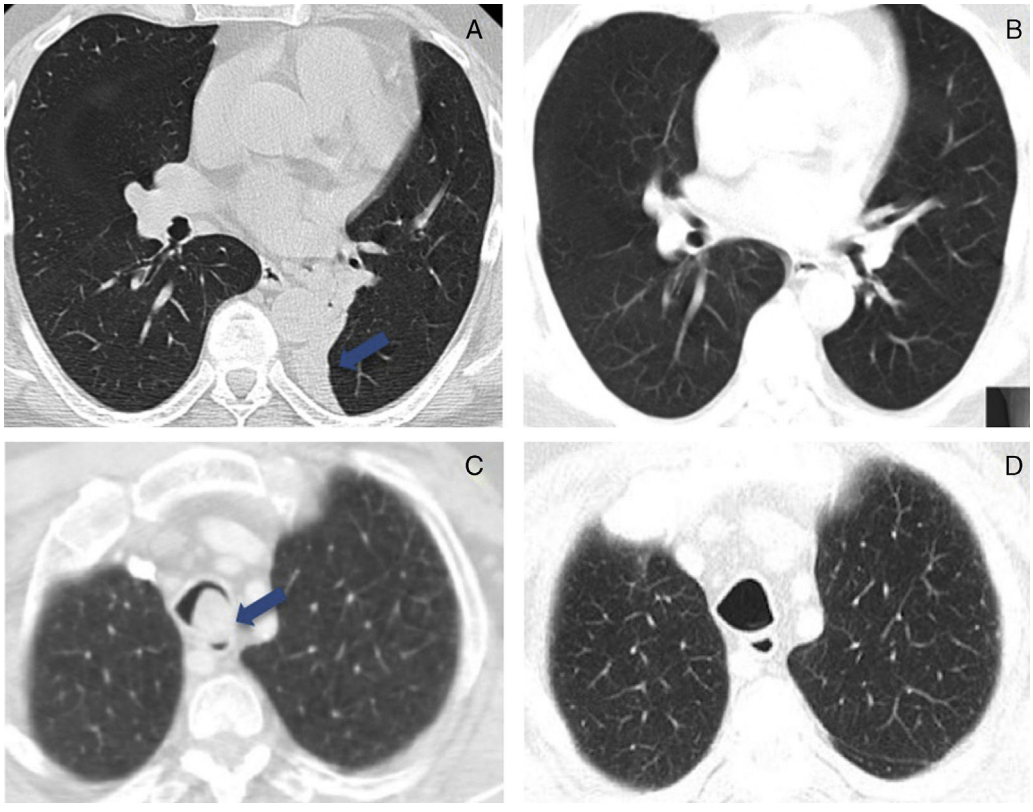

Figure 1 (A and B) Chest tomography in the patient no. 1. (A) Image at diagnosis revealed left lower lobe atelectasis (blue arrow). (B) Image after treatment with laser photocoagulation revealing no abnormalities. (C and D) Chest tomography in the patient no. 2 (C) Image at diagnosis showed a lesion in the posterior-lateral wall of the trachea (blue arrow). (D) Image after endoscopic treatment with no abnormalities.

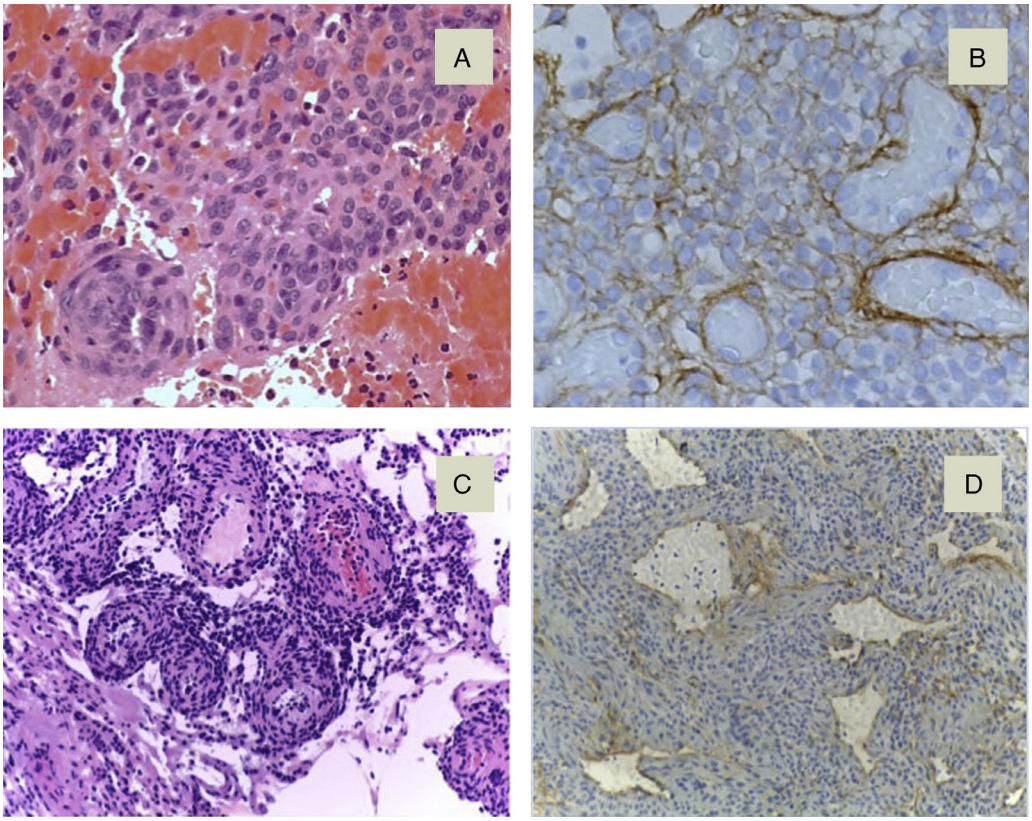

Figure 2 (A and B) Histological features in the patient no. 1. (A) H&E, ×400. (B) Type IV collagen, ×400. (C and D) Histological findings in the patient no. 2. (C) H&E, x200. (D) Type IV collagen, ×200.

cytoplasm, without necrosis. The neoplasia was highly vascularized with a mitotic count of 10 mitosis per 10 high-power fields (HPF) (Fig. 2). Immunohistochemical staining was positive for vimentin, actin and a pericellular pattern for type IV collagen, in the absence of epithelial, neuroendocrine and melanoma markers, being suggestive of a GT. An ^{18}fluorodeoxyglucose positron emission tomography (^{18}FDG-PET) scan and further investigation was negative for an extra-pulmonary origin. Due to patient co-morbidities, a minimally invasive treatment was preferred. The patient was submitted to three sessions of endobronchial laser photocoagulation with neodymium:yttrium aluminum garnet (Nd-YAG) equipment.

After 42 months of follow-up, the patient is asymptomatic with no endobronchial lesions and no signs of relapse.

The second patient was a 59-year-old male, Caucasian, former smoker, referred to the Pulmonology outpatient clinic because of chronic nonproductive cough and recent intense dyspnea. A chest CT showed a lesion in the posterior-lateral wall of the trachea (Fig. 1) and a flexible bronchoscopy revealed an endotracheal soft-tissue mass in the posterior wall, occupying almost all the tracheal lumen. Prompt rigid bronchoscopy with laser photocoagulation was then performed with opening of 50% of the tracheal lumen. The histological evaluation showed monotonous population of round to fusiform cells, in nests and surrounding vessels, with low atypia, and no necrosis or mitotic activity (Fig. 2). Immunohistochemical study was similar to that described in the first patient, and a GT was the final diagnosis. After staging, there was no evidence of other extra-tracheal lesions. The patient was submitted to another 3 sessions of diode laser equipment. After 38 months of follow-up, the patient is asymptomatic with endotracheal full response.

GT are uncommonly found in the trachea and in the main bronchus.[3] To the best of our knowledge, only 50 cases of a GT in the respiratory tract have been reported.[4,5] Our report describes two new cases occurring in the large airways.

GT are usually benign and the prognosis is generally good with only very rare reported cases of local recurrence.[3] Considering the rarity of these tumors in the large airways and the rarity of malignant potential, the best approach and treatment is debateable from a clinical point of view. In the two cases described in this report, an endobronchial approach with laser photocoagulation was performed.

Surgical treatment is considered the treatment of the choice in GT arising in large airways.[4,6] Nevertheless, endoscopic resection combined with laser ablation has been described in 10 patients[2,3] with no recurrence in the follow-up period. In the two cases described in this manuscript, an endoscopic approach was performed with no recurrence after a mean follow-up time of 40 months. The benign behavior of these tumors and the reported excellent outcomes of the endoscopic resection with laser ablation in these two patients, lead us to believe that this approach should always be considered in the treatment of a GT of the airways, causing less morbidity and mortality than the surgical intervention.

Conflicts of interest

The authors have no conflicts of interest to disclose.

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Non-invasive method for airway clearance in a patient with excessive dynamic airway collapse: A case study

Dear Editor,

I am writing you this letter to present the case of a lady affected by Excessive Dynamic Airway Collapse (EDAC) who subsequently felt better when treated with the simple tool which is explained as follows.

EDAC is defined as the pathological collapse and narrowing of the airway lumen by 50% or more in the sagittal diameter; which is entirely due to the laxity of the posterior wall membrane with structurally intact airway cartilage.[1,2]

EDAC is usually asymptomatic; when severe, it can cause refractory cough, dyspnea, inability to clear secretions, pneumonia, respiratory failure, and wheezing resistant to drugs.[1] A variety of treatment options has been suggested for EDAC, but large controlled studies are needed to confirm their efficacy.[2,3]

This is the case of a non-smoker 86-year-old woman (JAT) who signed an informed consent form. JAT is a housewife, has no risk factors for respiratory diseases but several comorbidities including anxiety and depression in treatment.

In 2004 she started having dyspnea at rest and orthopnoea, which were attributed to anxiety. At the beginning of 2007 severe EDAC was diagnosed by bronchoscopy (Figs. 1A and 2A–D). The spirometry showed reduction of forced expiratory flow at low lung volumes: Forced Expiratory flow at 25–75% of vital capacity (FEF25-75) was 40% of predicted and complete intrathoracic expiratory flow-limitation during tidal breathing. After Albuterole 400 μg forced expiratory flow at low lung volume improved (FEF 25–75 was 49% of predicted value). She started therapy with Formoterol/Fluticasone 6/100 μg.

As it was suggested that nocturnal and intermittent daytime use of CPAP kept the airway opened and improved sputum production in EDAC patients,[2,3] nocturnal CPAP (11 cmH_2O) with facial mask (she could not tolerate nasal mask) was used: sleep quality and orthopnoea improved.

In December 2007 JAT underwent endoscopic laser treatment with poor results and in September 2008 an endoluminal silicone y-stent (Dumon type) was inserted (Fig. 1B), but it was not successful probably because of the migration of the obstruction point toward the periphery of the airways tree.[3,5]

The following December it was replaced by a fully covered metal stent (Leufen) (Fig. 1C and D), which was removed in February 2009 because of granulation tissue growth and viscous secretion.

The severity of EDAC accordingly to Murgu classification system[4] was: F3, E3, S3, M: crescent type, O: idiopathic.

From 2007 to 2009 JAT underwent several bronchoscopies to clear secretions (at least 15); her quality of life (mean EQ-5D score 50) was very poor.

In March 2010 she was admitted to the pulmonary rehabilitation department for respiratory care with:

- one daily gym group-session
- Joint mobilization/limb training with ''unloaded'' arm/leg exercise
- Airways clearance with threshold-Positive Expiratory Pressure (tPEP), set at 8 cmH_2O.

CPAP improved sleep quality, but during bike training it was not helpful and severe dyspnea occurred. We then tried to training the arm bike with the application of non-invasive ventilation (NIV) using BPAP Synchrony S/T with inspiratory positive airway pressure 16 and expiratory positive airway pressure 8, with humidification included and facial mask (F&P HC 431). Although there is no evidence that NIV can improve exercise training in EDAC patients, we tried this