Bronchial glomus tumor with right upper lobe atelectasis*.

Artur Eugênio de Azevedo-Pereira, Moacyr Pezati Rigueiro, Fernando Conrado Abrão

Abstract

Glomus tumors are uncommon benign soft tissue neoplasms. We report the case of a 32-year-old male who presented with right upper lobe atelectasis due to an endobronchial tumor. The patient underwent right upper lobectomy and wedge bronchoplasty. The pathological diagnosis was bronchial glomus tumor. To our knowledge, this presentation (with right upper lobe atelectasis) has never before been reported. Glomus tumor should be considered in the differential diagnosis of endobronchial lesions causing lobar atelectasis.

Keywords: Glomus tumor; Bronchial neoplasms; Thoracic surgical procedures.

Introduction

Glomus tumors are uncommon benign soft tissue neoplasms. They are presumed to originate from cells resembling the modified smooth muscle cells of the glomus body.[1,2] Although glomus tumors are most commonly located in the subungual region, they can, occasionally, also be found at sites where glomus bodies are sparse or even absent.[2] The presence of this type of neoplasm in the respiratory tract is rare, and bronchial glomus tumors are even rarer.[1-8] We report the first case of a glomus tumor located in the right upper lobe bronchus and accompanied by right upper lobe atelectasis.

Case report

A 32-year-old male reported fever and dry cough 9 months prior to admission. On that occasion, he received treatment for pneumonia elsewhere, but the dry cough remained. The physical examination revealed right-sided wheezing, and a chest X-ray showed right upper lobe atelectasis (Figure 1a). A chest CT scan revealed an endobronchial lesion occluding the right upper lobe bronchus (Figure 1b), with no mediastinal lymph node enlargement. Fiberoptic bronchoscopy revealed an endobronchial tumor located in the right upper lobe bronchus. The tumor had a smooth, reddish surface and had obstructed the right upper lobe bronchus, without protruding into the right main bronchus. A biopsy provided inconclusive results. The patient underwent right thoracotomy with a presumed diagnosis of carcinoid tumor. Since the right upper lobe was atelectatic and fibrotic, we proceeded to a right upper lobectomy. The intraoperative histological examination demonstrated exiguous bronchial margins, and a wedge bronchoplasty was therefore performed.
Radical mediastinal lymph node dissection was not performed. The patient had an uneventful recovery and was discharged on the fourth postoperative day. The pathological examination of the resected piece revealed a polypoid tumor in the right upper lobe bronchus, measuring 1.7 × 1.0 cm. The microscopic examination revealed a tumor formed by thin-walled vessels surrounded by small cells with round nuclei and clear or eosinophilic cytoplasm (Figures 2a and 2b). The resection margins were tumor-free. Immunohistochemical analysis showed the cells to be positive for smooth muscle actin (1A4) and neuron-specific enolase (NSE). Tests for cytokeratin (AE1/AE3 and CAM 5.2), chromogranin, thyroid transcription factor-1 (TTF-1) and S100 protein were negative. The final diagnosis was bronchial glomus tumor. There was no recurrence during the 14 months of follow-up.

**Discussion**

Glomus tumors are uncommon benign tumors, constituting about 1.6% of all soft tissue neoplasms. They are presumed to originate from cells resembling the modified smooth muscle cells of the neuromyoarterial glomus or glomus body, which is a form of arteriovenous anastomosis thought to be associated with thermoregulation. Although glomus tumors are most commonly located in the subungual region, other common sites include the palm, wrist, forearm and foot. However, in rare cases, these tumors are also found at sites where glomus bodies are sparse or even absent, such as the viscera.

Several cases of glomus tumor arising from the trachea or the lung parenchyma have been reported. However, only nine cases of glomus tumor arising from the bronchus...
Although malignant behavior has been reported, glomus tumors are benign neoplasms and rarely recur after being completely excised.\(^2,11\)

Despite being a rare pathologic entity, bronchial glomus tumor should be considered in the differential diagnosis of endobronchial lesions causing right upper lobe atelectasis.

### References


### Table 1 - Reported cases of bronchial glomus tumor.

<table>
<thead>
<tr>
<th>Author</th>
<th>Patient age/gender</th>
<th>Clinical presentation</th>
<th>Location</th>
<th>Size cm</th>
<th>Treatment</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Okitsu et al.(^1)</td>
<td>41 y/female</td>
<td>Cough and dyspnea</td>
<td>LMB</td>
<td>ND</td>
<td>Endoscopic laser cauterization</td>
<td>3 m/NR</td>
</tr>
<tr>
<td>Gaertner et al.(^2)</td>
<td>20 y/male</td>
<td>LL atelectasis</td>
<td>LMB</td>
<td>1.4 × 1.3</td>
<td>LMB sleeve resection</td>
<td>9 m/NR</td>
</tr>
<tr>
<td>Oizumi et al.(^3)</td>
<td>48 y/male</td>
<td>Bloody sputum</td>
<td>LMB</td>
<td>0.7</td>
<td>LMB wedge resection</td>
<td>3 m/NR</td>
</tr>
<tr>
<td>Yilmaz et al.(^4)</td>
<td>29 y/female</td>
<td>LL atelectasis</td>
<td>LMB</td>
<td>1.5 × 1.0</td>
<td>Left bronchotomy with tumor resection</td>
<td>17 m/NR</td>
</tr>
<tr>
<td>Vailati et al.(^5)</td>
<td>40 y/male</td>
<td>RLL atelectasis</td>
<td>RMB</td>
<td>6.5 × 1.5</td>
<td>Endoscopic removal</td>
<td>1 m/NR</td>
</tr>
<tr>
<td>De Weerd et al.(^6)</td>
<td>37 y/male</td>
<td>Cough, fever and dyspnea</td>
<td>RBI</td>
<td>ND</td>
<td>Endoscopic removal</td>
<td>3 m/NR</td>
</tr>
<tr>
<td>Takahashi et al.(^7)</td>
<td>67 y/male</td>
<td>Cough</td>
<td>RUL bronchus</td>
<td>0.8</td>
<td>RUL bronchus sleeve resection</td>
<td>8 m/NR</td>
</tr>
<tr>
<td>Oizumi et al.(^3)</td>
<td>39 y/male</td>
<td>cough</td>
<td>LMB</td>
<td>2.5 × 2.5</td>
<td>Endoscopic removal</td>
<td>6 y/NR</td>
</tr>
<tr>
<td>Present case</td>
<td>32 y/male</td>
<td>cough</td>
<td>LMB</td>
<td>1.7 × 1.0</td>
<td>Right upper lobectomy with wedge bronchoplasty</td>
<td>14 m/NR</td>
</tr>
</tbody>
</table>

LL: left lung; LMB: left main bronchus; RMB: right main bronchus; RUL: right upper lobe; RBI: right bronchus intermedius; RLL: right lower lobe; ND: not described; NR: no recurrence; m: month(s); and y: years.

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