CASE REPORT

Solitary fibrous tumor of the larynx: Literature review and a case presentation

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Abstract Introduction: Solitary fibrous tumor (SFT) is a rare mesenchymal neoplasm, which is traditionally seen as a pleural mass, but can also occur in other locations. Although SFTs are very rare in the head and neck region, they have been reported in the orbit, nasal cavity, paranasal sinus, nasopharynx, parapharyngeal space, thyroid gland, and larynx. Laryngeal involvement has been previously reported in only 11 cases.

Case report: The case is here presented of a 57-year-old male with complaints of progressive hoarseness and difficulty in breathing which had been ongoing for 1 year. By direct laryngoscopy the mass which was oriented from the right vocal cord was totally excised.

Discussion: The clinical, radiological and histopathological findings are reported here, with a review of literature, to comprise the twelfth case of laryngeal solitary fibrous tumor.

1. Introduction

Solitary fibrous tumor (SFT) is a rare neoplasm, which is traditionally seen as a pleural mass, but can also occur in other locations because of its mesenchymal origin.1 The neoplasm was first described by Dr. Klemperer within the pleura in 1931. To the best of our knowledge there have only been 11 reported cases of laryngeal SFT in the English literature.1–11

We report the twelfth case of solitary fibrous tumor of the larynx with a literature review.

2. Case report

A 57-year-old male presented with progressive hoarseness and difficulty in breathing, which had been ongoing for 1 year. He reported no dysphagia or weight loss and no cervical mass was seen on physical examination. Indirect laryngoscopy revealed a pedunculated glottic mass originating from the right vocal cord and causing partial obstruction of the rima glottis (Fig. 1A). The polypoid mass changed location together with the breathing movements (Fig. 1B). Computed tomography scan (CT) demonstrated a polypoid mass that was attached
by a pedicle to the vocal cord. Direct laryngoscopy and total

tumor excision was performed. Pathological investigation

revealed a well-defined tumor composed of spindle cells

beneath the non-neoplastic surface epithelium (Fig. 2 A

and B). Tumor cells showed minimal cytological atypia. There

was no mitosis. Tumor cells were stained with vimentin, CD34,

and bcl-2 (Fig. 2C and D). Histopathological and immunohis-
tochemical findings were compatible with solitary fibrous

tumor. Throughout a follow-up period of 3 years the patient

has remained disease-free.
SFTs are spindle cell tumors, which are associated with serosal surfaces, especially the pleura, but have been observed to arise in various extrapleural locations such as the thoracic wall, mediastinum, pericardium, and abdominal cavity. SFTs are very rare in the head and neck, with case reports of locations in the orbit, nasal cavity, paranasal sinus, nasopharynx, parapharyngeal space, thyroid gland, and larynx. To the best of our knowledge there have only been 11 previous laryngeal cases reported. The current patient was determined with alaryngeal SFT originating from the right vocal cord. With the addition of this case, the demographic, clinical, endoscopic and radiological findings of these rare tumors have been summarized in Table 1.

SFTs present as a slow-growing, painless mass. The current case presented with progressive hoarseness and difficulty in breathing for the previous year. The average patient age at presentation of a laryngeal SFT is 51.25 years (13–74 years), with a male predominance (male–female ratio of 8:4). The current patient was a 57-year old male, consistent with the data in literature.

In documented cases, mainly laryngeal SFTs have been located in the supraglottic region but in the current case, the bulky pedunculated mass was arising from the glottic region. Similar to the current case, Thompson et al.2 reported a 49-year-old male with a smooth, round, submucosal mass arising from the inferior surface of the left true vocal cord. In contrast with the current case, a total obstruction of the rima glottis required an emergent tracheostomy in that case. The major presenting symptoms were non-specific in all cases as progressive hoarseness, foreign body sensation, cough, or even acute upper airway distress. In the current case the symptoms were progressive dysphonia and dyspnea.

The diagnosis of an SFT depends on its histological appearance. The SFT is mainly composed of spindle cells, which are randomly arranged on a collagenous background. Some cases have hemangiopericytoma-like areas. The diagnosis of SFT also depends on immunohistochemical investigation as the SFTs are immunoreactive for CD34, CD99, Bcl-2 and vimentin. They are usually negative for smooth muscle actin, S-100 protein, demsim, CEA and cytokeratin. In the current case, pathological investigation revealed a well-defined tumor composed of spindle cells beneath the non-neoplastic surface epithelium. Tumor cells showed minimal cytological atypia. There was no mitosis. Tumor cells were stained with vimentin, CD34, and Bcl-2.

The CT appearance of the current lesion as a polypoid mass was consistent with previous reports. The classic magnetic resonance imaging (MRI) findings of laryngeal SFT is a well-circumscribed mass isointense on both T1 and T2-weighted sequences. In the current case, MRI could not be taken as the patient was claustrophobic. With these benign radiological characteristics, the differential diagnosis of laryngeal SFT includes non squamous cell tumors such as hemangiomias, chondromas, chondrosarcomas, leomyomas, leomyosarcomas, rhabdomyomas, rhabdomyosarcomas, lipomas, salivary gland originated tumors and fibrohistiocytic tumors.

The main treatment of laryngeal SFTs is surgical excision. Although most cases are treated with a conservative tumor excision with direct laryngoscopy, partial laryngectomy and pharyngotomy have also been reported. Alobid et al.8 reported a case of laryngeal SFT treated with endoscopic CO2 laser excision. In the current case, direct laryngoscopy and total tumor excision was performed. SFTs of the thorax have a favorable prognosis although, some have been reported to be malignant. Extrapleural SFTs, however, are almost always benign and are cured with simple

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Author</th>
<th>Age</th>
<th>Gender</th>
<th>Clinical presentation</th>
<th>Location</th>
<th>Symptom duration</th>
<th>Radiographic findings</th>
<th>Endoscopic findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Selcuk et al.</td>
<td>57</td>
<td>Male</td>
<td>Dysphonia, dyspnea</td>
<td>Right cord vocal</td>
<td>12 months (m)</td>
<td>Polyoid mass</td>
<td>Bulky pedunculated mass</td>
</tr>
<tr>
<td>2</td>
<td>Safneck et al.</td>
<td>13</td>
<td>Male</td>
<td>Foreign body sensation (Fbs), dyspnea</td>
<td>Epiglottis</td>
<td>1.5 m</td>
<td>Mass</td>
<td>Bulky pedunculated mass</td>
</tr>
<tr>
<td>3</td>
<td>Benlyazid et al.</td>
<td>60</td>
<td>Male</td>
<td>Dyspnea</td>
<td>Left ventricular fold</td>
<td>20 m</td>
<td>Mass</td>
<td>Left laryngeal immobilisation</td>
</tr>
<tr>
<td>4</td>
<td>Alobid et al.</td>
<td>29</td>
<td>Male</td>
<td>Hoarseness, Fbs</td>
<td>Right false vocal cord</td>
<td>6 m</td>
<td>Mass</td>
<td>Smooth round mass</td>
</tr>
<tr>
<td>5</td>
<td>Alobid et al.</td>
<td>71</td>
<td>Female</td>
<td>Dyspnea</td>
<td>Epiglottis</td>
<td>6 m</td>
<td>Mass</td>
<td>Smooth mass at epiglottis</td>
</tr>
<tr>
<td>6</td>
<td>Dotto et al.</td>
<td>38</td>
<td>Male</td>
<td>Dysphagia</td>
<td>Right false vocal cord</td>
<td>12 m</td>
<td>Mass</td>
<td>Not reported</td>
</tr>
<tr>
<td>7</td>
<td>Fan et al.</td>
<td>65</td>
<td>Female</td>
<td>Hoarseness</td>
<td>Left supraglottic</td>
<td>12 m</td>
<td>Polyoid mass</td>
<td>Swelling of epiglottis</td>
</tr>
<tr>
<td>8</td>
<td>Stomeo et al.</td>
<td>73</td>
<td>Male</td>
<td>Dysphagia</td>
<td>Right aryepiglottic fold, epiglottis</td>
<td>3 m</td>
<td>Mass</td>
<td>Enhanced mass</td>
</tr>
<tr>
<td>9</td>
<td>Thompson et al.</td>
<td>49</td>
<td>Male</td>
<td>Dyspnea</td>
<td>Left cord vocal Supraglottic</td>
<td>24 m Several months</td>
<td>Polyoid mass Hourglass mass</td>
<td>Submucosal mass Supraglottic mass</td>
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<td>10</td>
<td>Morvan et al.</td>
<td>52</td>
<td>Female</td>
<td>Dysphagia</td>
<td>Supraglottic</td>
<td>Unknown</td>
<td>Mass</td>
<td>Cystic appearing mass</td>
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<td>11</td>
<td>Elbuluk et al.</td>
<td>74</td>
<td>Female</td>
<td>Dysphagia</td>
<td>Right aryepiglottic fold</td>
<td>Unknown</td>
<td>Mass</td>
<td>Smooth submucosal mass</td>
</tr>
<tr>
<td>12</td>
<td>Chang et al.</td>
<td>34</td>
<td>Male</td>
<td>Fbs</td>
<td>Right Supraglottic</td>
<td>6 m</td>
<td>Mass</td>
<td>Smooth submucosal mass</td>
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surgical excision. SFTs of the head and neck generally have a benign course.

Although no cases of malignant laryngeal SFTs have been reported, long term clinical follow-up must be applied to be able to detect any local recurrence.

Conflict of interest statement

We have no conflicts of interest.

References