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Surgical approach to a giant fibrolipoma of the supraglottic larynx

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Abstract
This paper describes the surgical procedures for a fibrolipoma that first appeared as a giant tumour in the hypopharynx and extended to the cardiac antrum of the oesophagus. At the initial surgery, a pedunculated tumour originating from the left arytenoid of the larynx was found to occupy the cervical as well as thoracic oesophagus and was thus removed through a lateral pharyngectomy. A histological examination revealed fibrolipoma. However there was a recurrence of the tumour in the arytenoid and the patient suffered from dyspnoea. In addition, a submucosal tumour was also found in the left false vocal fold. At the second surgery, the masses in the arytenoid and false vocal fold were subtotally removed without damaging the mucosa. The mucosa of the arytenoid was sutured to the thyropharyngeal muscle on the same side and the arytenoid swelling disappeared almost completely. The post-operative course has been uneventful for more than two years.

Key words: Larynx; Laryngeal neoplasms; Surgery, operative

Introduction

Most tumours in the hypopharynx are malignant with an epithelial origin and the prognosis is generally poor. Mesenchymal tumours such as lipogenic neoplasms in the hypopharynx are uncommon and they often arise from the aryepiglotticfold of the larynx.[1] They are generally solitary and primarily affect adult males.[2] In most cases these benign laryngeal neoplasms are encapsulated, smooth and usually pedunculated.[3]

Although lipogenic tumours such as laryngeal lipoma or fibrolipoma are histologically benign, they are often thought to be clinically malignant because of frequent recurrence over an extended period of time.[4]

We herein report a case of giant fibrolipoma of the larynx that was successfully treated by a subtotal excision via a lateral pharyngotomy and submucosal excision.

Case report

A 60-year-old male visited the clinic due to an abnormal sensation in his hypopharynx of four years duration. He had also noticed a voice change and felt a 'lump' in his throat on swallowing, but there was no swallowing pain nor dyspnoea. On examination, a white, smooth tumour was found on the left side of the hypopharynx that occupied the left pyriform sinus and reached the left arytenoid process. The left false fold was not swollen.

A barium swallow roentogenogram revealed a tumour measuring 30 cm in length that was pedunculated from the left hypopharynx region and reached the thoracic oesophagus. The oesophagus was markedly dilated by the tumour. A computed tomographic (CT) scan demonstrated a big mass in the oesophagus having a low density inside and enhancing with contrast medium.

Pre-operation magnetic resonance imaging (MRI) detected a giant mass that originated from the arytenoid of the larynx and extended to the end of the oesophagus. A typical high signal intensity on the T1-weighted images suggested the tumour was composed of adipose tissue. A fibre-optic examination revealed a pedunculated tumour, in which the pedicle was attached to the arytenoid of the left supraglottic larynx and ended bilobularly close to the cardia of the stomach. These radiographic as well as endoscopic findings suggested a large laryngeal lipogenic tumour with extension to the thoracic oesophagus.

The tumour was removed under general anaesthesia using a left cervical skin incisional approach. After a cricopharyngeal myotomy was performed, the pharynx was opened through the lateral wall at the level of the superior cornu of the thyroid cartilage and the smooth pedicle of the tumour was detected. Using finger dissection, the tumour was lifted out of the oesophagus and a giant pedunculated tumour was excised at the base of the arytenoid (Figure 1).

Around the base of the tumour, multiple small lesions with smooth, round structures suggesting lipoma were found. After removing these small lesions, the hypopharynx was closed and the patient's post-operative course has since been uneventful without any swallowing difficulty. Histologically, the tumour was composed of adipose and fibrous tissues and was diagnosed to be a fibrolipoma.

Two years after surgery, the patient began to notice a change in his voice again and dyspnoea on exertion. There was, however, no dysphagia nor any symptoms suggestive of aspiration. A fibre-optic examination revealed a massive bulging of the left arytenoid that obscured the vocal folds (Figure 2). A prompt MRI study was performed and

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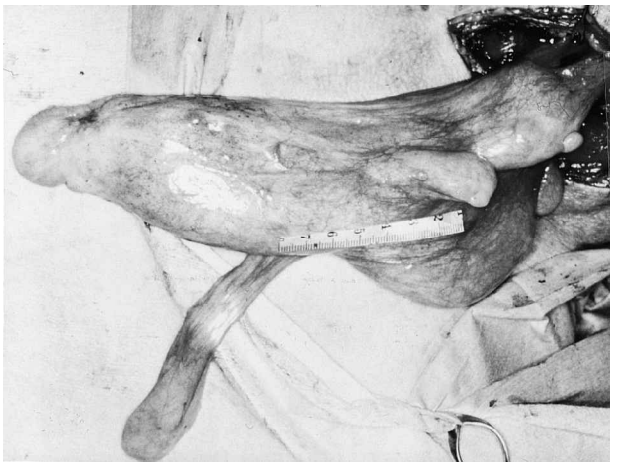

FIG. 1

A bilobulate, pedunculated giant tumour from the left arytenoid of the larynx.

demonstrated a typical high signal T1 intensity which indicated a lipogenic tumour not only in the arytenoid but also in the false vocal fold.

Following a tracheostomy, surgery was performed to remove the laryngeal tumour under general anaesthesia. The same left lateral incision, that had been made at the initial surgery, was used again. The left thyroid ala was resected, and the surface of the lipogenic tumour was exposed along the posterior surface of the thryoid cartilage (Figure 3). The encapsulated round tumour was carefully separated from the mucosa of the false vocal fold. After removing the sub-epithelial mass in the false vocal fold, the lipogenic tumour in the left arytenoid was detected and removed (Figure 4). In order to avoid damaging the mucosa, direct laryngoscopy was performed at the same time to confirm the orientation of the surgery.

Finally, the mucosa of the arytenoid was sutured to the surrounding portions of the thyropharyngeal muscle, and both the lower hypopharynx and the false vocal fold were clearly visualized (Figure 5). The post-operative course

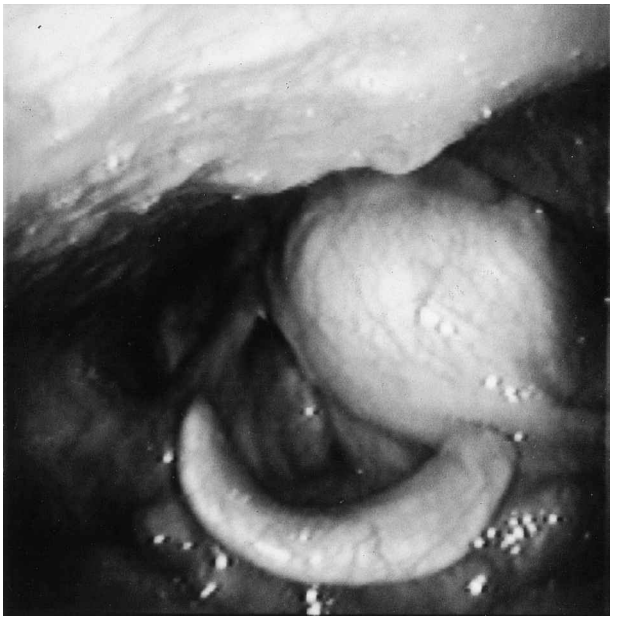

FIG. 2

Laryngeal fibroscopy. The left arytenoid is markedly swollen by the submucosal tumour and it is difficult to observe the left false vocal fold.

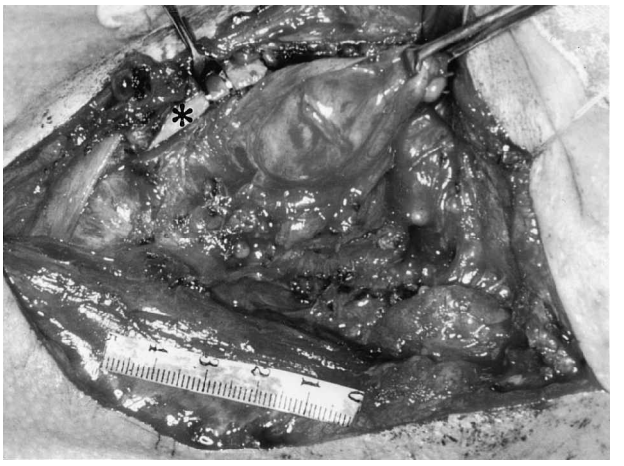

FIG. 3

The surgical removal of the tumour existing at the left false vocal fold and arytenoid. The thyroid cartilage (*) was lifted and a round mass was removed submucosally.

was uneventful, the patient's dyspnoea disappeared and the tracheostomy was closed on the seventh day after surgery. The patient has been followed constantly for more than 12 months and there has been no evidence of regrowth. Histologically the tumour was a fibrolipoma.

Discussion

Since lipomas arise from mature fat cells (adipocytes) in the body, this benign neoplasm may occur in any organ. However, reports of laryngeal lipoma (or fibrolipoma) are very rare. An isolated lipogenic tumour in the larynx without any systemic manifestation makes a clinical diagnosis extremely difficult. Indeed, less than 100 cases of lipogenic tumours in the laryngeal region has been reported.[1,2,5]

Lipoma of the larynx and hypopharynx primarily affect adult males. At the time of diagnosis, most patients are in their sixth decade of life or older.[1] Such tumours are generally solitary and arise in the supraglottic larynx. The most common sites are the aryepiglottic fold, vestibular fold and epiglottis. Myxolipoma, fibrolipoma are types of

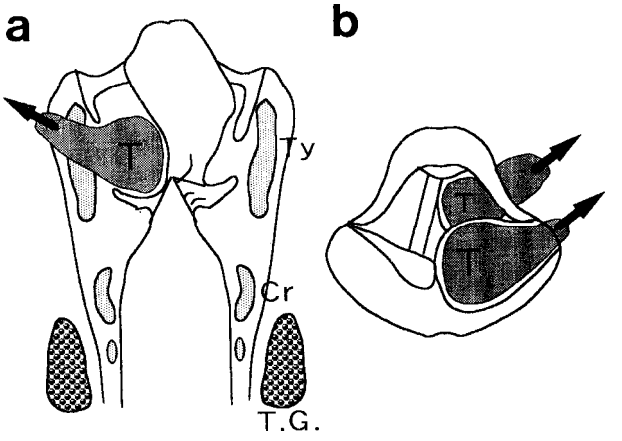

FIG. 4

The illustrated schema of the surgical approach. a. Coronal view. The tumour at the level of false vocal fold was removed under the layer of the thyroid cartilage. b. Axial view. The tumours of the false vocal fold and arytenoid were removed submucosally.

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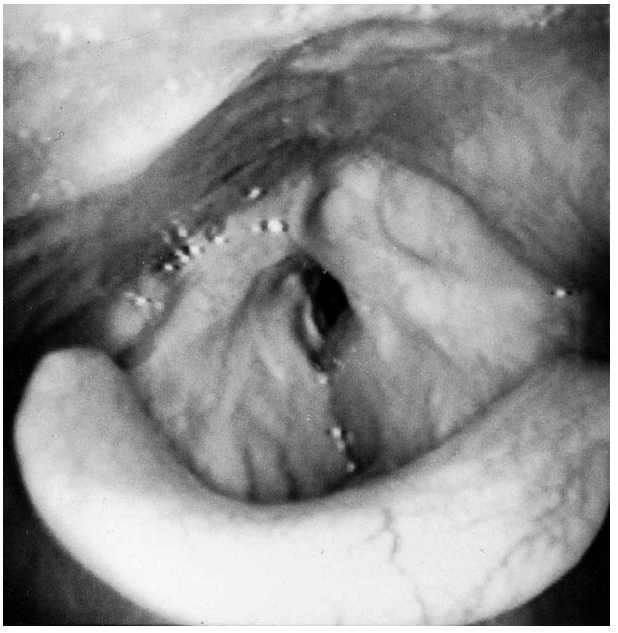

FIG. 5

Post-operative view. The arytenoid swelling has almost completely disappeared. The false vocal fold swelling has decreased in comparison to the pre-operative condition (Figure 2).

lipoma that consist of an admixture of various mesenchymal elements.[4] This is the first report of a giant lipogenic tumour that almost reached the cardiac antrum.

Lipogenic tumours are histologically benign, but they often show clinically malignant aspects. They can sometimes be fatal due to suffocation[4,6] The giant fibrolipoma found in the present case fortunately was pedunculated in the oesophagus. However, it could have caused a fatal obstruction of the airway due to protrusion into the larynx.

Another problem with lipomas or fibrolipomas is their frequent recurrence over a long time period. Even after a long time interval, recurrence occurs. Jesberg[4] described a case of fibrolipoma of the pyriform sinus that had three major recurrences at 10 to 15 year intervals, over a 35-year period. As Trizna *et al.*[7] described, recurrences may easily occur in cases where the lipoma is considered to be a manifestation of generalized lipomatosis.

Surgery is the treatment of choice for any laryngeal lipomas of any histological types and most is curative.[2] Small tumours can be removed endoscopically. Large tumours require external approaches such as a lateral pharyngotomy or larynofissure. However, it is also true that lipomas that exist close to the laryngeal ventricle or false vocal fold are hard to approach and can easily damage phonation. In our case of a giant fibrolipoma, the pedunculated tumour which extended from the hypopharynx to the cardia of the stomach was removed through a lateral pharyngotomy. However, the initial surgery did not remove the intralaryngeal tumour completely and this resulted in potential growth, not only into the arytenoid, but also into the false fold. Although the submucosal tumours in the false vocal fold and arytenoid were successfully extracted, a careful follow-up for any other new lesions is required.

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