CASE REPORT

Vocal cord palsy anatomical changes and a foreign body mimicking malignancy

Helen Turner,¹ Ali Qureishi,² Priy Silva³

¹Oxford University Hospitals NHS Trust, Oxford, UK

²Department of ENT, Oxford Deanery, Milton Keynes, UK

³Department of ENT, Oxford University Hospitals Trust, Oxford, UK

Correspondence to

Dr Helen Turner,
helen.turner@doctors.org.uk

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SUMMARY

A 74-year-old woman presented with a history of prolonged dysphonia, a red flag symptom for laryngeal cancer. Flexible nasal endoscopy revealed a lesion which looked suspicious for malignancy and therefore she went onto have a microlaryngoscopy and an attempt at biopsy. It was during this procedure that a foreign body was removed whole from a dilated laryngeal ventricle. We believe that some subtle anatomical changes caused by a pre-existing unilateral vocal cord palsy contributed to the impaction of this foreign body.

BACKGROUND

Otolaryngologists commonly encounter foreign bodies in the upper and lower aerodigestive tract. Patients can present with a wide variety of symptoms related to the level of impaction of the foreign body. Laryngeal foreign bodies that do not cause significant airway obstruction are a diagnostic challenge as symptoms can mimic other pathologies leading to a delayed diagnosis.¹

CASE PRESENTATION

A 74-year-old woman was referred to otolaryngology outpatients with a suspected diagnosis of laryngeal malignancy. Her presenting symptom was a 6-week history of dysphonia.

The patient was a non-smoker, previously known to the otolaryngology department with an idiopathic right vocal cord palsy diagnosed in 1983. The dysphonia had persisted and there were no exacerbating or relieving factors. She reported no other aerodigestive tract symptoms such as dysphagia or odynophagia and no referred otalgia. She had no associated respiratory symptoms and her weight was stable.

No palpable neck lumps were identified during examination but oropharyngeal examination revealed signs of candidiasis.

A flexible nasal endoscope was passed to examine the larynx and pharynx. This revealed evidence of a long-standing right vocal cord palsy with the right cord in the paramedian position with good compensation from the left vocal cord. On close examination, a lesion was seen in the right laryngeal ventricle.

A well-circumscribed, white mass was identified which seemed to be sitting deep in the laryngeal ventricle (figure 1). It measured around a third of the length of the vocal cord but did not seem tethered to the cord itself.

INVESTIGATIONS

An urgent microlaryngoscopy and CT of the neck was booked to evaluate the lesion further and obtain samples for histological diagnosis.

The CT scan indicated a right dilated laryngeal ventricle containing fluid and air (figure 2).

DIFFERENTIAL DIAGNOSIS

Given the history of new onset voice changes and endoscopy revealing a laryngeal lesion, the most likely diagnosis was thought to be a laryngeal malignancy.

Other differentials for dysphonia include acute infections such as laryngitis, voice overuse, benign lesions such as polyps and neurological conditions.

TREATMENT

During microlaryngoscopy, a white lesion was again seen arising from the right laryngeal ventricle. In an attempt to biopsy the abnormal area, the biopsy forceps managed to remove the mass in its entirety (figure 3). It was at this point that the lesion resembled a foreign body and therefore the treatment was complete.

The laryngeal ventricle appeared enlarged and there was an obvious right vocal cord palsy (figure 4). However, no mucosal abnormalities were detected during the remainder of the microlaryngoscopy.

OUTCOME AND FOLLOW-UP

The foreign body resembled the appearance of food debris (figure 3). This was later confirmed histologically and the patient was informed of this in a follow-up clinic.

DISCUSSION

Foreign bodies in the larynx are a rare occurrence especially in the adult population. The literature identifies the wide range of symptoms that patients with laryngeal foreign bodies can present with. The symptoms such as those of laryngeal cancer² relate to the anatomical site of the pathology. The shape and size of the material ingested also has a bearing on the location of impaction. Patients can present acutely with signs of airway obstruction which can prove fatal or there can be delayed diagnosis.¹

Given this patient's only symptom being that of dysphonia, she was referred and managed as a suspected head and neck cancer.

Although dysphonia has many causes, it is almost always present in cases of laryngeal cancer.² The detection rate of laryngeal cancer for patients referred with dysphonia is around 3.8%.³

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Figure 1 Microlaryngoscopy view of a lesion in laryngeal ventricle.

Current guidance recommends that all referrals for suspected head and neck cancer should have direct pharyngolaryngoscopy.⁴ This is usually performed in the clinic using a flexible nasal endoscope. In this case the appearance of the foreign body mimicked the appearance of a cancerous lesion.

One study identified that in a rapid access dysphonia clinic where patients underwent flexible pharyngolaryngoscopy, 17% of patients had clinically suspicious lesions visualised. Histology obtained for the suspicious lesions in this study demonstrated that 47% were in fact histologically benign, 22% went on to have normal microlaryngoscopies and 22% had histologically confirmed carcinoma.³ As in this case, a clinically suspicious laryngeal lesion does not always mean a malignant process.

This patient's vocal cord palsy may have attributed to the risk of impacted foreign bodies and hence mimicked the findings of a malignant lesion.

One of the subtle signs of vocal cord paralysis on direct visualisation and radiological imaging is thinning of the thyroarytenoid muscle and enlargement of the space directly above; the laryngeal ventricle⁵ (figure 4). Therefore, the space above the cord may be more amenable to harbouring foreign bodies. Also

Figure 3 Foreign body removed whole from laryngeal ventricle during microlaryngoscopy.

Figure 4 Microlaryngoscopy view after foreign body removal showing a dilated laryngeal ventricle and thinning of the right thyroarytenoid muscle in keeping with a vocal cord palsy.

Figure 2 Coronal CT of the neck with an arrow showing air and fluid in the right laryngeal ventricle.

given that the patient has a unilateral vocal cord palsy, it could be possible that sensation to the glottis is also reduced if the function of the superior laryngeal nerve is impaired. This could explain why the patient did not experience any coughing, dysphagia or odynophagia while the foreign body was in situ.

Learning points

- ▶ All red flag symptoms should be investigated thoroughly to avoid missing a malignancy.
- ▶ Pre-existing laryngeal abnormalities or anatomical changes should be considered during investigations and their contribution to the presenting symptom.
- ▶ Only a tiny minority of patients presenting with dysphonia are shown to have laryngeal cancer.

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Competing interests None.

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