Case Report

Giant pleuropericardial cyst: An unusual cause of hoarseness

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Abstract

Unilateral vocal cord paralysis (UVCP) is a major cause of dysphonia and can be diagnosed during laryngoscopic examination. UVCP is secondary to several causes.

Idiopathic left recurrent laryngeal nerve (RLN) paralysis is a relative common clinical entity. In certain cases, a mediastinal cause can be identified. When a patient presents with vocal cord palsy, physicians should never overlook a cardiovascular cause that will help to diagnose the paralysis. Immediate treatment should be administered. This case report presents an interesting and rare cause of hoarseness due to a giant pleuropericardial cyst in an elderly person. We highlight this case due to the rarity of a giant pleuropericardial cyst affecting the left RLN.

Keywords: Hoarseness; Pleuropericardial cyst; Recurrent laryngeal nerve (RLN); Vocal cord palsy

Introduction

Hoarseness is a fairly common clinical problem for which patients require medical attention. Although carcinoma of larynx and laryngeal trauma are common causes for vocal cord palsy, there are certain extra-laryngeal pathological conditions that can affect the recurrent laryngeal nerve (RLN) and lead to vocal cord paralysis. Malignancies of the thyroid gland, oesophagus, and lungs or a growth near the jugular foramen have been reported as common causes of
vocal cord paralysis. The most common extra-laryngeal pathology causing vocal cord palsy is bronchogenic carcinoma. Several cardiopulmonary diseases associated with left RLN palsy have also been described in the last 100 years. RLN paralysis associated with cardiac pathology is known as cardiovocal syndrome or Ortner’s syndrome according to the name of the Austrian physician, N. Ortner. He first described patients with vocal cord palsy secondary to left atrial enlargement due to mitral valve stenosis. Since then, several cardiac causes leading to left RLN paralysis have been reported. The pathology in cardiovocal syndrome usually includes aneurysm or cardiac dilatation causing a compression injury to the RLN. Unilateral vocal cord paralysis (UVCP) is a common clinical condition with unknown incidence and prevalence in the general population. A giant pleuropericardial cyst is an extremely rare clinical condition for causing UVCP. Pleuropericardial cysts are benign mesothelial cysts which arise as a result of persistence of mesenchymal lacunae that usually fuse to form the pericardial sac. A pleuropericardial cyst is an uncommon lesion, constituting merely 7% of all mediastinal masses. Benign pleuropericardial cysts are usually asymptomatic unless they become secondarily infected, which is rare. Because slow or partial injury to the RLN may not always cause hoarseness, routine examination of vocal cord in certain cases of heart diseases has been advocated. In this study we present a case of 68-year-old man showing left vocal cord palsy due to a pleuropericardial cyst.

Case report

A 68-year-old man presented to the Department of Otorhinolaryngology with complaints of voice changes over two months. He was a non-smoker and non-diabetic but was hypertensive. He had been taking antihypertensive medications for five years. He had no complaints of dysphagia, aspiration, or neck or chest discomfort. There was no history of intubation or trauma. Physical examination did not show any abnormalities. An indirect laryngoscopy revealed left vocal cord paralysis, which was confirmed by nasopharyngolaryngoscopy (Figure 1). No mass was observed in the larynx or hypopharynx. Clinically, there was no other cranial nerve involvement. A clinical diagnosis of left RLN paralysis was made, and the nerve was evaluated to determine the exact cause of the paralysis. A computed tomography (CT) scan of his neck and thorax revealed a smooth ovoid mass in the left anterior lower chest abutting the chest wall, diaphragm, and the left pericardium; this mass showed a thin, slightly higher density wall and low density contents, consistent with fluid (Figure 2). There was no mediastinal lymphadenopathy. This case clearly demonstrated left sided RLN palsy caused by a giant pleuropericardial cyst. This was an unusual complication, which, to the best of our knowledge, is a rare clinical presentation. The patient was sent to the Department of Cardiothoracic Surgery for further management. Complete resection of the pleuropericardial cyst was performed via video-assisted thoracoscopy. There was complete resolution of symptoms after removal of the cyst. At the six-month follow-up, he was completely asymptomatic.

Discussion

UVCP is a common clinical situation in a busy otolaryngology outpatient department. Several aetiologies have been attributed to the RLN paralysis including iatrogenic or non-iatrogenic trauma, neurogenic, tumour involvement, infections, collagen vascular disease, or idiopathic. Advancement in diagnostic tools such as the CT scan and magnetic resonance imaging (MRI) has revealed previously hidden causes of certain diseases. Pleuropericardial cysts are uncommon benign lesions with an estimated prevalence of 0.01%, and their occurrence in mediastinal tumours is approximately 7%. Most cases of pleuropericardial cysts are asymptomatic and are usually found by chance on a chest X-ray performed for another reason. Histologically, pleuropericardial cysts are lined with a single layer of mesothelial cells in a stroma of connective tissue, and they contain clear water-like fluid. They become symptomatic when compression of the surrounding structures increases, or they develop an infection. The cyst size may vary from 2 to 15 cm in diameter and is commonly located in the anterior mediastinum at the cardiophrenic angle. The cyst usually follows a benign course and rarely produces complications, such as compression of the heart, bronchus, or RLN, rupture of the cyst, and sudden death. In our case, the left RLN was injured by compression or traction due to cardiovascular anatomical changes induced by the cyst. The left RLN is commonly supplied by the anterior bronchoesophageal artery, and the right RLN is supplied by the inferior thyroid artery. Damage to these arteries can cause vocal cord palsy in which an occlusion of these arteries by compressive pathologies are very unlikely due to the course of the vessels. Radiological assessment of the patients with extralaryngeal pathology includes chest X-ray, X-ray imaging with a barium swallow, radionuclide thyroid scan, and a chest or neck CT scan or MRI. A chest X-ray is usually ordered as the first line of imaging as it is readily available and gives an idea of the underlying conditions. A CT scan or MRI confirms the extension and localization.

Figure 1: Nasopharyngolaryngoscopic view of larynx showing left vocal paralysis.
of the disease more accurately compared with physical examination or conventional radiography. A negative CT scan for the aetiology determines that the vocal cord palsy is of idiopathic origin. In male patients, oesophagoscopy is advocated in cases in which no primary malignancy is found on the CT scan, as a higher incidence of oesophageal malignancies is observed among males. The nerves in the mediastinum cannot be directly delineated on the CT scan, but the functional anatomy and clinical significance are important during analysis of thoracic imaging. The management of vocal cord palsy requires determination of the site and aetiology for the paralysis. Surgery is the only treatment is to relieve the cyst-induced compression on the RLN. Cardiothoracic and vascular surgery (CTVS) consultation was sought in our case. Complete resection of pleuropericardial cysts is usually performed by open thoracotomy or via video-assisted thoarcoscopy, which are the effective methods of treatment. In our case, video-assisted thoracoscopy was performed. Removal of the cyst in our case resulted in instantaneous relief of symptoms.

Conclusions

In patients presenting with hoarseness without any obvious neck and lung pathology, cardiac causes need to be ruled out. Although a pleuropericardial cyst is an extremely rare pathology, it should be kept in mind during a cardiac evaluation for vocal cord paralysis. A thorough medical history, clinical examination, and investigations are important parameters before starting the treatment procedure. Cardiovocal hoarseness is an important clinical entity, and the cause must be determined before undertaking any patient procedures. Early diagnosis of a pleuropericardial cyst may be helpful in starting the treatment, restoring the vocal cord function, and preventing permanent damage. Owing to the rarity of vocal cord palsy in heart disease, a novel clinical situation, such as that observed in this case, should not be overlooked.

Conflict of interest

The authors have no conflict of interest to declare.

References
