



CASE REPORT

Bilateral Vocal Cord Palsy After Mediastinoscopy

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Since its introduction by Carlens in 1959,¹ mediastinoscopy has become an important tool for diagnosis of mediastinal lesions and staging of mediastinal malignancies. It is more accurate at staging lung cancer than the computed tomographic scans or positron emission tomography scans.² From all the complications only less than 0.5% have clinical significance, the worst is a massive hemorrhage, which requires a trained team and well equipped operating theatre for thoracic, vascular and cardiac surgery.³ The rate of recurrent nerve paralysis or vocal cord palsy after mediastinoscopy has been reported at less than one percent. These complications are more common in redo neck surgery. Some other causes of operative injury to the vocal cords include intubation and placement of esophageal stethoscopes, pacemaker placement, medial sternotomy, carotid surgery, internal mammary artery harvest, and esophagectomy.

We present a patient with mediastinal mass, who developed transient recurrent laryngeal nerve paresis and airway compromise after this procedure.

Case Presentation

A-55-year-old, 168 cm tall, weighing 60 kg, a smoker with one-week history of neck swelling and hoarseness presented to emergency department with chest pain. Patient was found to have mediastinal lymphadenopathy, and superior vena cava syndrome. No wheezing or stridor was observed during deep breathing. Diffuse neck edema was present with distended veins on the left side. Rest of the airway exam was favorable. Second IV was inserted on the lower extremity and patient was taken to the operating room. Inhalation induction was facilitated with dexmedetomidine and ketamine. Intubation with 7.5 size ETT, was smooth and atraumatic. Direct laryngoscopy view was grade one. Cuff was inflated with 5 ml of air to control the air leak.

General anesthesia was maintained with sevofluraine in oxygen and air. Cisatracurium was administered before surgical stimulation. At the end of the procedure patient met criteria for extubation and was transferred to PACU in stable condition with oxygen via facemask. During the recovery room stay he developed dyspnea and stridor with deep breathing. He was treated with warmed, humidified oxygen, nebulized racemic epinephrine IV hydrocortisone and furosemide. Patient had only minimal improvement with the treatment and sitting posture. ENT consult was obtained. Direct laryngoscopy showed bilateral vocal cord paralysis with cords in the para-median position (Fig. 1).



Figure 1. Vocal cords in the paramedian position.

Patient was transferred to intensive care unit for further observation and symptoms gradually improved. He was discharged home after two days in stable condition. Two weeks later pathology results came back positive for malignancy in multiple paratracheal stations. The tumor was inoperable and patient was referred to medical oncology.

Discussion

Traction of the recurrent nerve causes the greatest stimulation to nerves. The traction on both nerves may frequently occur with dissection along the trachea. Thus, it is as important as a biopsy or cautery injury.⁵ Unilateral paralysis may be asymptomatic. However, bilateral paralysis is

almost always manifested by stridor and different degree of dyspnea. The severity of dyspnea depends on the vocal cord position. Hoarseness occurs when paralysis is of sudden onset. The extent of recurrent laryngeal nerve damage, paresis or paralysis, is important for the vocal cord paralysis. A vocal cord lies in the midline when paralysis is complete. The paramedian position is the most common; it is seen slightly lateral to the midline. In bilateral paralysis the vocal cords are flaccid and seldom in the midline position at first.

To prevent this complication, it is worth considering possible measures, such as monitoring the cuff pressure, and to release it after retractor placement or improve image by using a video mediastinoscope. More visualization contributes that the surgeon puts less traction on the nerve. Usage of electromyography for recurrent nerve monitoring during mediastinoscopy may be useful when bulky nodes in the left paratracheal groove that must be harvested, but such monitoring is not indicated for standard cervical mediastinoscopy.⁵

References

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