Medical Image of the Week: Bilateral Vocal Cord Paralysis

Figure 1. Flow-volume curve demonstrating flattening of both the inspiratory and expiratory limbs consistent with extra-thoracic obstruction.

Figure 2. Static image from video demonstrated the vocal cords essentially fixed in the adducted position during the inspiratory and expiratory cycle.

A 59-year-old morbidly obese woman with acute hypoxemic respiratory failure secondary to pulmonary emboli required emergency intubation. She was described by the anesthesiologist as having a difficult airway. The patient was liberated from the ventilator after two days. Following extubation she complained of hoarse voice and dyspnea. Physical exam revealed audible stridor. The upper airway was normal by CAT imaging. Flow-volume curve demonstrated marked flattening of both the inspiratory and expiratory limbs, consistent with a fixed extra-thoracic obstruction (Figure 1). Endoscopy revealed the vocal cords to be in the adducted position, with minimal movement throughout the respiratory cycle, consistent with bilateral vocal cord paralysis (Figure 2).

Traumatic intubation follows thyroid surgery as the most common cause of bilateral vocal cord paralysis (1). In a minority of patients spontaneous recovery may occur. Surgical treatment options include cordotomy or tracheostomy. Nocturnal BIPAP has been used in patients who decline surgery (2).

Charles J. Van Hook MD, Britt Warner PA-C, Angela Taylor MD, and Jacquelynn Gould MD.
Longmont United Hospital
Longmont, CO USA

References

1. Brandwein M, Abramson AL, Shikowitz MJ. Bilateral vocal cord paralysis following endotracheal intubation. Arch Otolaryngol Head Neck Surg. 1986 Aug;112(8):877-82. [\[CrossRef\]](#) [\[PubMed\]](#)
2. Rosenthal LH, Benninger MS, Deeb RH. Vocal fold immobility: a longitudinal analysis of etiology over 20 years. Laryngoscope. 2007 Oct;117(10):1864-70. [\[CrossRef\]](#) [\[PubMed\]](#)