Acute Unilateral Vocal Fold Paralysis After Cervical Injection of Intravenous Drugs
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ABSTRACT

Objective: To present a case of unilateral vocal fold paralysis (VFP) after injection of cocaine and heroin into the neck and to discuss the clinical presentation, etiology and management options of acute VFP secondary to injection injury.

Results: Only a handful of cases of VFP after cervical intravenous drug injection have been reported, last of which was documented in 1990. A comparison between management of the current case and management of previous cases is shared. After 72 hours of observation with no improvement in symptoms, the patient underwent direct laryngoscopy with left vocal fold injection of calcium hydroxyapatite with adequate medialization. Repeat swallow evaluation demonstrated improvement of oropharyngeal dysphagia with no signs of aspiration on oral intake and improved dysphonia.

Conclusion: Although uncommon, VFP is a potential complication of cervical intravenous drug injection that should be recognized by the otolaryngologist. Early management of acute unilateral VFP with vocal fold injection medialization may prevent airway and swallow-related complications.

INTRODUCTION

• Opioid drug addiction has become one of the worst epidemics in modern history. Between 2002 to 2013, the rate of heroin abuse/dependence has increased 90.0% from 1.0 to 1.9 per 100 1
• Intravenous drug users utilize larger caliber veins in the neck for venous access when smaller peripheral veins sclerose. Intravenous drug paralysis with the recurrent laryngeal nerve.
• Vocal fold paralysis (VFP) is a rare complication of cervical neck injections.
• We report a case with and a review of the literature with an update in management strategy.

CASE REPORT

History: 33 year old female with sudden onset of hoarseness and dysphagia after cervical injection of cocaine and heroin into the left neck.

Physical Examination: Soft breathy voice. Small area of ecchymoses on the left neck just above the median clavicle. Immediate cough after sips of water. Flexible fiberoptic laryngoscopy demonstrated an immobile left true vocal fold (VF) in the paramedian position with a large glottic gap.

CT with contrast of the neck: Edema within the carotid sheath between the common carotid artery and internal jugular vein without evidence of vascular injury, with asymmetric positioning of the vocal folds. (Figure 1)

Management:
• Admitted for observation. Made nil per os for aspiration risk. Started on IV steroids and antibiotics.
• Bedside swallow evaluation showed overt signs of aspiration with thin liquids.
• Repeal laryngoscopy in 72 hours unchanged.

Intervention:
• Direct laryngoscopy with injection medialization of left TVF with aqueous glycerin/carboxymethylcellulose gel (Prolaryn Gel; Merz North America, Raleigh, NC).
• Postoperative swallowing evaluation showed no signs of aspiration and an improved voice.

DISCUSSION

Suspected Etiology
• Seeding of bacteria from a contaminated needle or infiltration of the narcotic solution into the extravascular space.
• Localized inflammation and edema within the carotid sheath (Figure 1).
• Impingement of the recurrent laryngeal nerve.

Review of Literature (Table 1)
• Presenting symptoms: hoarseness, airway obstruction and neck abscesses.
• Prognosis: 0/11 cases of VFP from IVDU had return of function, even with surgical decompression.
• Intervention: Bilateral VFP more commonly associated with need for acute airway intervention (4/5 presented with airway obstruction and required tracheotomy).

Injection laryngoplasty as update to treatment options
• Can decrease need for permanent medialization thyroidplasty.
• Better perceptual voice quality and glottic sufficiency as compared to voice therapy alone or observation.

CONCLUSION

• Vocal fold paralysis is a rare complication of cervical intravenous drug use.
• Initial management of UVFP may consist of observation, voice therapy, or temporary injection laryngoplasty.
• Early IL for UVFP may reduce the need for permanent medialization.

REFERENCES


TABLE 1. Summary of cases of VFP secondary to cervical IVDU

<table>
<thead>
<tr>
<th>Author(s), Year</th>
<th>Age</th>
<th>Post-injection presentation time</th>
<th>Presentation</th>
<th>Vocal Fold Paralysis</th>
<th>Management</th>
<th>Length of Follow-up (months), Results</th>
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<tr>
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<td>H</td>
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M= months, H= hoarseness, A0= airway obstruction, NA= neck abscess, ROF= recovery of function