

Leech Living in Larynx: A Case Report

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ABSTRACT

The identification and removal of a foreign body in the upper airway are critical components of the daily practice of otolaryngologists. A live foreign body, such as a leech, can often be difficult to diagnose and presentation can be delayed. Once attached to the mucus membrane, they consume blood averaging 890% of their weight resulting in airway obstruction by the leech itself. Here we report, a 72-year-old male with persistent hemoptysis for 1 month. A live leech was detected at the level of the vocal cord on nasopharyngolaryngoscopy. With the co-ordination of the anesthesiologist, it was removed by direct laryngoscopy under general anesthesia. Sometimes the cause of unexplained hemoptysis can be live leech in the airway which can be diagnosed with nasopharyngolaryngoscopy and removal from the airway needs coordination with the anesthesiologist.



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INTRODUCTION

The identification and removal of a foreign body in the upper airway are critical components of the daily practice of otolaryngologists. Inanimate foreign bodies like beads, paper fragments, erasers, beans, and small toy components are most common while live foreign bodies are unusual.¹ A live thing like a leech, can often be difficult to diagnose and presentation can be delayed. These segmented worms inhabit mostly freshwater, natural spring water, and marine environments. To get connected to the host they use suckers and secrete anesthetics to not disturb host.² When one drinks water, leeches in it enter the body and settle on the mucosa of the oropharynx, nasopharynx, tonsils, esophagus, or nose but hardly in the larynx.³ Leech in the airway can have variable presentation depending on the site of its lodgment. The diagnosis and removal can be challenging.

CASE

A 72-year-old male from a remote village of Nepal, presented with hemoptysis which had been persistent for last one month. He also complained of vocal fatigue. However, there was no dyspnea, dysphagia, hematemesis or melena. Except

of his occasional smoking habit, his past medical history was unremarkable. Ear, nose and throat examination was unremarkable. For the cough and hemoptysis, he had taken medicine twice over the counter. As the symptoms did not improve, he went to the local health post where he was tested for pulmonary tuberculosis and was found negative, then sent home with amoxicillin and cough suppressant. Still the symptoms remained unchanged. Then he visited the capital city, Kathmandu, to confer more advice. To rule out the local cause for the symptoms, nasopharyngolaryngoscopy was done. Surprisingly, there was dark brown colored segmented leech at level of vocal cord which immediately travelled underneath the vocal cord in response to the light of the endoscope. On taking history in details whether if he was in contact with fresh water, he recalled drinking stream water in paddy field a month back and was having bug crawling sensation inside throat for past 7 days. Having confirmed the diagnosis, patient was shifted to the operation theater. With the co-ordination of anesthesiologist, direct laryngoscopy under THRIVE (transnasal humidified rapid insufflation ventilatory exchange) was performed.

We opted to perform the surgery under the THRIVE rather than utilizing endotracheal intubation, as the introduction of the tube could potentially dislodge the leech into the distal airway, thereby worsening the situation. Endoscope-mounted forceps was introduced via the direct laryngoscope, revealing a dark brown, segmented leech at the level of the vocal cords, which was making a vigorous effort to evade the illumination. Because of the leech's mobility, it took us few attempts until we could grasp it and take it out of the airway.

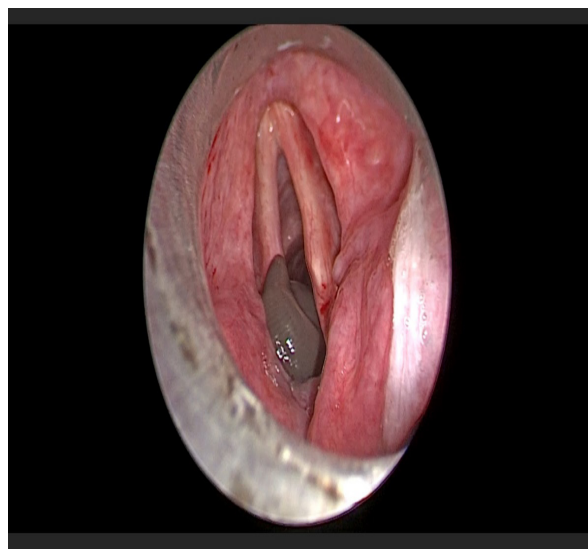


Figure 1. Dark brown colored segmented leech between the true vocal cords.

Post-operatively patient was shifted to ENT ward and hemoptysis wasn't noticed afterwards, hence he was discharged next day.

DISCUSSION

Leeches are the worms that belong to the phylum Annelida of the class Hirudinea.⁴ They are parasites that live by occasional blood sucking by attaching to fish, amphibians, and mammals. To feed, they adhere to their host's mucous membrane with anterior suckers made up of their jaws and teeth.⁵ Once attached to the mucus membrane, they consume blood averaging 890% of their weight and ingest about 9 mL of blood within 70.5 minutes.⁶ Their saliva comprises a poorly defined anesthetic agent, a histamine-like vasodilator increasing regional blood flow, and an anticoagulant, hirudin, preventing coagulation of the blood meal in the crop.⁷ Either swimming in contaminated streams or drinking contaminated water from rivers, lakes, and springs, they can enter the airways by the nose or mouth.⁸ On fetching water to paddy field, the patient had drank water from the spring while the leech made its way to larynx.

Leech in the airway is rare, diagnosis can't be made unless strong suspicion exists. Leech endoparasitism most commonly presents itself as nasal infestation and repeated inexplicable epistaxis.⁶ Leech is mostly found in the nose; nevertheless, it can creep down into the airway and clog it. Despite the utilization of

nasopharyngolaryngoscopy, leeches may be overlooked, as they have a propensity to conceal themselves in the presence of light. Patients presenting with hoarseness or hemoptysis should not be overlooked when there is recent interaction with fresh water lakes or streams.⁹ As a result of leech lodging in nasopharynx, anemia due to chronic bleeding has been reported.¹⁰ Some patients have even been treated incorrectly as laryngitis, malignancies, asthma, or tuberculosis.^{5,11} The reports of leech detachment from the mucosa come via irrigation hypertonic sodium chloride solution, glycine pherice, and lidocaine have been reported.⁵ However these irrigation is not practicable in larynx, only option feasible is to do direct laryngoscopy and removal with blunt forceps. Furthermore, there is a possibility of bleeding occurring at the site of attachment when the leech is detached from the mucosa.

Foreign body in airway always poses a threat to life, especially in case of live foreign body like leech, making diagnosis challenging. Flexible nasopharyngolaryngoscopy is the most convenient tool to make a diagnosis in such cases. The gold standard to preserve an emergency diagnosis and removal is direct laryngoscopy.¹² We favored direct laryngoscopy under THRIVE over the flexible bronchoscope due to the anticipated rapid movements of the leech upon the introduction of light sources and instruments into the airway. THRIVE anesthesia is a high-flow nasal cannula-based apneic oxygenation method. It employs transnasal humidified rapid insufflation ventilatory exchange, which can widen the apneic window and slow the rate of carbon dioxide increase. It buys the longer time for the airway procedure. THRIVE anesthesia may be effective for patients with acute hypoxemic respiratory failure or having laryngeal surgery. The flexible bronchoscope demonstrates constraints in terms of speed, maneuverability of the forceps, and the dimensions of the forceps, which are comparatively smaller. On the other hand, with flexible bronchoscope on topical anesthesia, patient may cough and leech may dislodge distally. Leech itself may get anesthetized and fall into distal bronchi. As the leech was in the glottis, we fixed direct laryngoscope and grasped it with endoscope mounted forceps. Since leech is slippery and can be ruptured readily and chances of aspiration are high, it is quite crucial to remove it gently and sensibly. Hence, blunt forceps are preferable.

CONCLUSION

Alive foreign body in airway is rare occurrence. In a patient with symptoms of hemoptysis, hoarseness, or respiratory discomfort, if has a history of contact with untreated water and, a live leech in the respiratory system may be present. Endoscopic procedures are helpful for both diagnosis and therapy. Removal under THRIVE is preferred over endotracheal intubation as later can potentially dislodge leech in distal airway. Direct laryngoscopy and removal with blunt forceps has better maneuverability of the forceps easing the grasping procedure of the leech.

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Conflict of Interest: None.

Consent: JNMA Case Report Consent Form was signed by the patient and is attached with the patient's chart.

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