



## **A new method for removal of supraglottic leech infestation, an unusual cause of hemoptysis**

Mohammad Reza Kasraei<sup>1</sup>, Ehsan Ramezanian Nik<sup>2\*</sup>

<sup>1</sup>Pulmonologist, Tehran University of Medical Sciences, Tehran, Iran

<sup>2</sup>Fellow of Pulmonology, Lung Disease Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

---

### **ARTICLE INFO**

*Article type:*

*Case report*

---

*Article history:*

Received: 25 May 2019

Revised: 5 June 2019

Accepted: 7 June 2019

---

*Keywords:*

Bronchoscopy

Cryotherapy

Foreign Body

Leech

► Please cite this paper as:

Kasraei MR, Ramezanian Nik E. A new method for removal of supraglottic leech infestation, an unusual cause of hemoptysis. J Cardiothorac Med. 2019; 7(2):447-449.

---

---

### **ABSTRACT**

Foreign bodies in upper airway may have various presentations and be life threatening. Leeches can attach to upper airway and cause serious problems. Herein we report a 55-year-old man with hemoptysis due to attachment of leech and explain our technique for its removal.

## **Introduction**

Foreign bodies in the upper airway are one of the most challenging medical emergencies and have various presentations depending on their physical properties and location. Leeches are rare foreign bodies and may localize in the nose, pharynx, supraglottis, trachea and esophagus, or rarely in the larynx (1). The symptoms of a laryngeal leech include hemoptysis, dysphonia, stridor, choking, respiratory distress, and foreign body sensation (2). In this report, we describe a case of a live leech located in a patient's anterior supraglottic area just above vocal cords and the technique used to remove it.

## **Case report**

A 55-year-old man was admitted to our pulmonary ward at our referral hospital with a chief complaint of hemoptysis from one week ago. He also noticed a brief discomfort sensation in the throat and nausea. His physical examination was unremarkable. In laboratory data except mild decrease in hematocrit, the rest of lab tests were normal. Also his Chest CT scan was unremarkable. He was farmer and lived in a village. He used fresh stream water for washing face and hands and occasionally drank it.

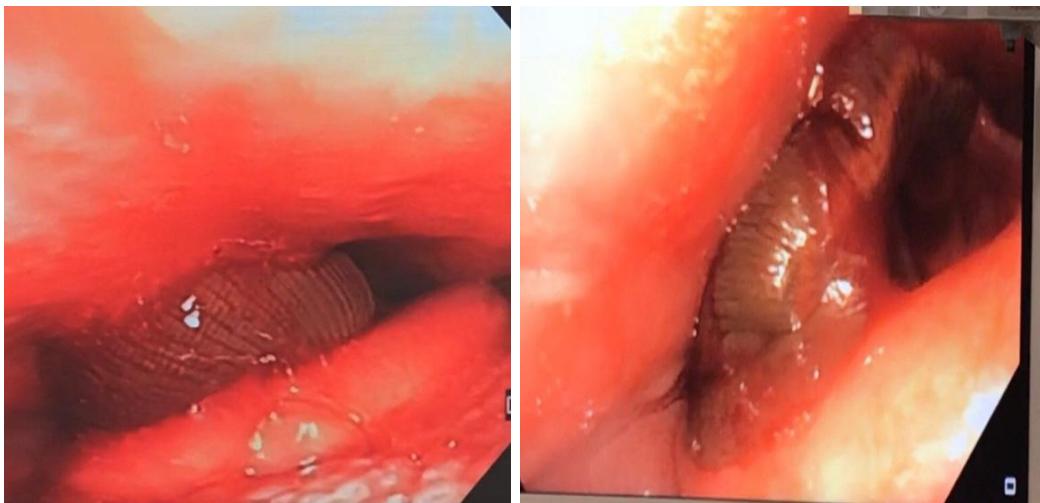
Flexible bronchoscopy was performed and revealed a large and dark gray leech in supraglottic area that its head moved around and sometimes entered into trachea through vocal cords (Figure 1).

---

\*Corresponding author: Ramezanian Nik E. Lung Disease Research Center, Mashhad University of Medical Sciences, Mashhad, Iran. Tel and Fax: +985138436199; Email: ehsan.nick@gmail.com

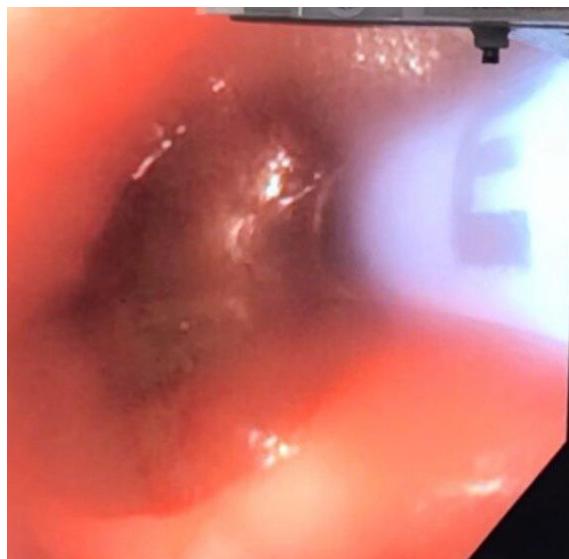
© 2015 mums.ac.ir All rights reserved.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



**Figure 1.** The presence of a leech in supraglottic area.

We transferred him to the operating room and monitored him closely. Our anesthesiologist tried several times for removal of leech by direct laryngoscopy and Magill forceps but it couldn't be removed due to its movements and location. We switched again to flexible bronchoscopy and decided to use cryoprobe (ERBE, ERBOCRYO CA, Tübingen, Germany) for removal of leech. We didn't use forceps because the risk of injury to leech and probably incomplete removal. After local anesthesia with lidocaine 1% through the bronchoscope, we applied cryoprobe near the sucker head of leech because its movement was less and increased chance of detachment of it from mucosal surface without injury. After 8 seconds, we activated cryoprobe by use of pedal, removed entire bronchoscope and probe in it. The leech adhered to probe without injury and completely removed (Figure 2).



**Figure 2.** Removal of the leech by Cryoprobe.

Its length was about 8 cm and alive after procedure (Figure 3).



**Figure 3.** The removed leech.

Then complete bronchoscopy was done and except bloody secretion, other parts were normal. Patient was discharged 24 hours later without complications.

## Discussion

Leeches belong to the Annelida and comprise subclass of hirudinea. Leeches have parasitic life and live in stream waters, springs and moist area. They attach with sucking tail strongly to host's mucosa and bite with another sucker head. They secrete anticoagulant factors containing hirudin, which inhibits the thrombin, factor IXa and other enzymes and cause bleed if infested in body(3). Leeches are rare foreign body and in case reports various methods applied for leech removal but there isn't standard procedure for it. The most frequent technique for leech removal is applying forceps and direct laryngoscopy with local anesthesia (4, 5). This method is simple and not need to special device and able to do in most emergency wards. But if the leech be near the

vocal cords or in trachea or distal parts, this method can be impossible or hazardous. Applying force strongly may cause serious damage on the tissue. Some clinician use hypertonic saline (6, 7) or glycerine phenice (8, 9) for detachment of leech from mucosa but experts believed this hypertonic saline can cause bronchospasm or chemical injury to tissue. A cryoprobe passed through the flexible or rigid bronchoscope can be especially useful for removal of blood clots, mucous plagues, organic and biologic material because strong adherence (Cryoadherence). This strong and secured adherence makes to avoid losing it during removal (10, 11). According to these capacities, we suggested that cryoprobe can be used as a safe and secured method for removal of live foreign bodies such as leeches.

### Conflicts of Interest

The authors declare that there is no conflict of interest

### References

1. Baharloo F, Veyckemans F, Francis C, Biellot MP, Rodenstein DO. Tracheobronchial foreign bodies: presentation and management in children and adults. *Chest*. 1999 May 1;115(5):1357-62.
2. Rahimi-Rad MH, Alizadeh E, Samarei R. Aquatic leech as a rare cause of respiratory distress and hemoptysis. *Pneumologia* (Bucharest, Romania). 2011;60(2):85-6.
3. Bilgen C, Karci B, Uluöz Ü. A nasopharyngeal mass: leech in the nasopharynx. *International journal of pediatric otorhinolaryngology*. 2002 May 31;64(1):73-6.
4. Moosavi-Movahedi AA, Golchin AR, Nazari KK, Chamani J, Saboury AA, Bathaei SZ, Tangestani-Nejad S. Microcalorimetry, energetics and binding studies of DNA-dimethyltin dichloride complexes. *Thermochimica acta*. 2004 May 27;414(2):233-41.
5. Zhang P, Zhang R, Zou J, Zhu T. A rare case report of tracheal leech infestation in a 40-year-old woman. *International journal of clinical and experimental medicine*. 2014;7(10):3599.
6. Zolfaghrazadeh M, Pirouzi M, Asoodeh A, Saberi MR, Chamani J. A comparison investigation of DNP-binding effects to HSA and HTF by spectroscopic and molecular modeling techniques. *Journal of Biomolecular Structure and Dynamics*. 2014 Dec 2;32(12):1936-52.
7. Litch JA, Bishop RA. Saturated aqueous sodium chloride solution for the removal of leeches. *Tropical doctor*. 2000;30(2).
8. Askari N, Eshaghian A. Otorrhagia bleeding due to leech bite. *Advanced biomedical research*. 2012;1.
9. Chamani J, Heshmati M. Mechanism for stabilization of the molten globule state of papain by sodium n-alkyl sulfates: spectroscopic and calorimetric approaches. *Journal of colloid and interface science*. 2008 Jun 1;322(1):119-27.
10. Stoller JK. Murray & Nadel's Textbook of Respiratory Medicine. *Annals of the American Thoracic Society*. 2015 Aug;12(8):1257-8.
11. Sehgal IS, Dhooria S, Behera D, Agarwal R. Use of cryoprobe for removal of a large tracheobronchial foreign body during flexible bronchoscopy. *Lung India: official organ of Indian Chest Society*. 2016 Sep;33(5):543.