

## An unusual cause of hemoptysis in a child: Live leech in the posterior pharynx

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**Abstract.** An 8-year-old girl was admitted to the emergency department with hemoptysis. Her history revealed that she had been drinking unfiltered tap water several days before. Physical examination revealed a black live foreign object in the pharynx with local posterior pharyngeal oozing. Pharyngeal leech was suspected and removed immediately using forceps. After removal of the leech, the bleeding stopped immediately and the patient felt comfortable. The leech was identified as belonging to the species *Limnatis nilotica*. Pharyngeal leeches should be included in the differential diagnosis of patients with hemoptysis, especially in patients with a history of drinking unfiltered water from sources where aquatic leeches are commonly found. Cases such as this should be considered as emergencies, and all measures should be taken to avoid hemoptysis and death.

### INTRODUCTION

Leeches are blood-sucking hermaphroditic parasites that vary in color and range in length from a few millimeters to half a meter; they are cylindrical or leaf-like in shape, depending on the contraction of their bodies (Lent *et al.*, 1988; El-Awad & Patil, 1990). Leeches enter into the mouth in raw drinking water, and they localize on the mucosa of the oropharynx, nasopharynx, tonsils, oesophagus, or nose (Mohammad *et al.*, 1990; Bilgen *et al.*, 2002). From that location they secrete a substance called hirudin, which inhibits coagulation of the blood, and start to suck blood. They grow rapidly through blood sucking and may stay where they are for some weeks.

### CASE REPORT

An 8-year-old girl was admitted to the emergency department with hemoptysis. Physical examination revealed a temperature of 36.8°C, pulse rate of 90/minute, respiratory rate of 18/minute, oxygen saturation of 95%, and blood pressure of 90/60 mm Hg, and local nasopharyngeal oozing. Other examination findings were normal.

Initial hematologic tests disclosed that her complete blood count was within normal limits (hemoglobin 12.5 g/dL; hematocrit 37.9%; white blood cell count  $9.5 \times 10^9/L$ ; and platelet count  $381 \times 10^9/L$  with 77% neutrophils, 14% lymphocytes, 6% monocytes, 2% eosinophils, and 1% basophils on peripheral smear). Initial coagulation tests also revealed normal

findings (prothrombin time 12.2 s, activated partial thromboplastin time 34.2 s, fibrinogen 280 mg/dL, thrombin time 15.5 s). Biochemical findings were also within normal limits.

Her history also revealed that she had been drinking unfiltered water from a tap several days before. There was no history of recent immersion in freshwater lakes or streams. Physical examination was re-evaluated and a black live foreign object with local pharyngeal oozing was seen on the posterior pharynx. Pharyngeal leech was suspected and removed immediately using forceps without local anesthesia because of laryngeal aspiration risk. It was a black leech and 10 mm in diameter and 5 cm long (Figure 1). After removal of the leech, the bleeding stopped immediately and the patient felt comfortable. Microbiology consultation was made and the leech was identified as belonging to the species *Limnatis nilotica*. She was treated with metronidazole for secondary infection risk and discharged without any problem on the second day of admission.

## DISCUSSION

This pathological condition is extremely rare in Turkey; and it may have serious, even lethal complications. Leeches are rare foreign bodies in the upper respiratory tract (White, 1998). This foreign body, in the respiratory tract is an emergency and requires immediate attention because the ensuing airway obstruction may cause hypoxia and death (Cundall *et al.*, 1986; Labadi & Jamal, 1997). When a leech is present in the nasal cavity or nasopharynx, patients present with epistaxis, nasal obstruction, and/or the sensation of a foreign body moving around in the nose (Labadi & Jamal, 1997). If a foreign body is in the nasal cavity, it presents as an emergency that requires immediate attention, because after leeches attach themselves to a mucous membrane, they ingest blood, and weigh on average 8.9 times their weight (Al-Hadrani *et al.*, 2000). Bleeding persists because there are anticoagulants in the saliva of the leech such as hirudin (El-Awad & Patil, 1990).

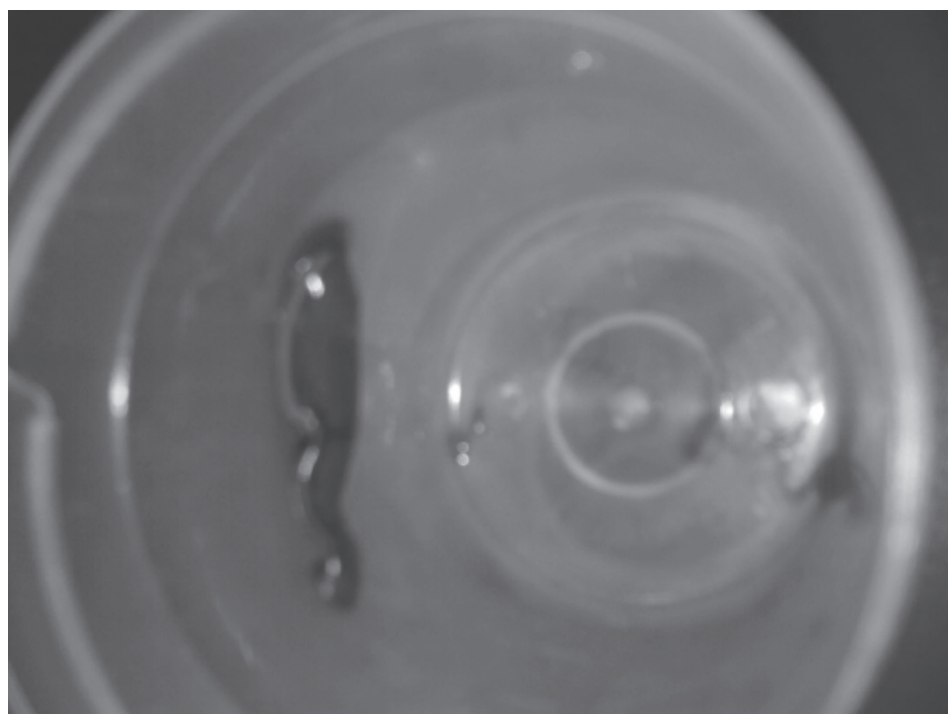


Figure 1. Photograph of leech, *Limnatis nilotica* removed from the posterior pharynx

They may cause severe anemia, which may require blood transfusion (White, 1998).

The possibility of leech endoparasitism should not be overlooked in patients, especially children, presenting with hemoptysis and a history of recent immersion in freshwater lakes or streams in areas where aquatic leeches are commonly found. Diagnosis is easy when a leech is in the nasal cavity. However, when it is lodged in the nasopharynx, examination of the patient under general anesthesia may be required, especially in small children (Bilgen *et al.*, 2002).

Techniques for the removal of nasal leeches vary from using forceps for immediate extraction to the use of various substances to tranquilize the leech or relieve pain as the parasite is being removed (Bilgen *et al.*, 2002). Removal of leeches from the larynx can be performed by direct laryngoscope, with the patient under general or topical/local anesthesia. If a leech is in the nares or upper pharynx, it can be detached by applying 30% cocaine, 1:10,000 adrenalin, or dimethyl phtalate to it. Another method is irrigation with strong saline, vinegar, turpentine, or alcohol. It is difficult to grasp a leech with forceps because it has a soft and slippery skin, which ruptures easily (Pandey *et al.*, 2000). Firm traction should not be used when pulling a leech off because parts of its mouth may remain behind, leading to continuation of bleeding and secondary infection (Uygur *et al.*, 2003). We used forceps, which are more appropriate for removing a leech in the pharyngeal cavity.

In conclusion, pharyngeal leeches should be included in the differential diagnosis of patients with hemoptysis, especially in patients with a history of drinking unfiltered water from sources where aquatic leeches are found. Cases such as this should be considered as medical emergencies, and all measures should be taken to avoid hemoptysis and death.

## REFERENCES

- Al-Hadrani, D.C., Faucon, F. & Fingerhut, A. (2000). Hoarseness due to leech ingestion. *The Journal of Laryngology and Otology* **14**: 145–146.
- Bilgen, C., Karci, B. & Uluoz, U. (2002). A nasopharyngeal mass: Leech in the nasopharynx. *International Journal of Pediatric Otorhinolaryngology* **64**: 73–76.
- Cundall, D.B., Whitehead, S.M. & Hechtel, F.O. (1986). Severe anaemia and death due to the pharyngeal leech *Myxobdella africana*. *Transactions of the Royal Society of Tropical Medicine and Hygiene* **80**: 940–944.
- El-Awad, M.E. & Patil, K. (1990). Haematemesis due to leech infestation. *Annals of Tropical Paediatrics* **10**: 61–62.
- Kaygusuz, I., Yalcin, S. & Keles, E. (2002). Leeches in the larynx. *European Archives of Oto-Rhino-Laryngology* **258**: 455–457.
- Labadi, M.H. & Jamal, M.N. (1997). Leeches in the larynx. *The Journal of Laryngology and Otology* **111**: 980–981.
- Lent, C.M., Fliegner, K.H., Freedman, E. & Dickonson, M.H. (1988). Ingestive behaviour and physiology of the medicinal leech. *The Journal of Experimental Biology* **137**: 513–527.
- Mohammad, Y., Rostum, M. & Dubaybo, B.A. (2002). Laryngeal hirudiniasis: An unusual cause of airway obstruction and hemoptysis. *Pediatric Pulmonology* **33**: 224–226.
- Pandey, C.K., Sharma, R., Baronia, A., Agarwal, A. & Singh, N. (2000). An unusual cause of respiratory distress: Live leech in the larynx. *Anesthesia and Analgesia* **90**: 1227–1228.
- Uygur, K., Yasan, H., Yavuz, L. & Dogru, H. (2003). Removal of a laryngeal leech: a safe and effective method. *American Journal of Otolaryngology* **24**: 338–340.
- White, G.B. (1998). *Leeches and leech infestation*, in Cook GC, Manson's Tropical Diseases, 20th ed. London: Saunders; p. 1523–1525.