

# Laryngeal Leech Infestation: A Rare Cause of Upper Air Way Obstruction in Children

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**Abstract:** Laryngeal leech infestation is a rare cause of upper air way obstruction in children. A high index of clinical suspicion of laryngeal leech infestation has to be made in child presented with foreign body sensation in the aerodigestive tract, symptoms and signs suggestive of upper air way obstruction especially in areas where drinking water from the streams and ponds is a habit. Here, we report a 9-year-old male child who presented with signs of upper air way obstruction: coughing, shortness of breath, stridor and use of accessory muscles. Direct laryngoscope examination showed a visible black mobile leech through the anterior glottis area having attachment at the anterior commissure and the other at the anterior subglottic area occupying around 75% of glottic opening. The leech adhered to the larynx was grasped cautiously with laryngeal forceps and the leech removed alive. The patient was transferred to ward with stable vital signs. Subsequently patient was decannulated and discharged home.

**Keywords:** laryngeal leech infestation, direct laryngoscope, upper air way obstruction

## Case Presentation

A 9-year-old male child presented to our tertiary hospital with coughing up blood, frequent spitting of blood-stained saliva and sensation of foreign body moving on his throat of one-week duration. He was initially treated at a nearby local hospital with intravenous ceftriaxone and dexamethasone for three days with a consideration of acute tonsillopharyngitis. Despite the treatment he had worsening of cough and frequent spitting of blood-stained saliva accompanied with easily fatigability and headache. For these complaints the child was referred to our hospital for the consideration of foreign body aspiration. While taking the history we identified that the child usually swims in the river and has also drunk the river water.

Physical examination showed acutely sick child tachycardia with a pulse rate of 110 beats per minute, respiratory rate of 24 breaths per minute, temperature of 36.5°C and saturation of oxygen 99% with atmospheric oxygen. He also had pale conjunctivae and audible stridor. On our examination of the throat we found that the tongue, the surrounding palate and the oropharyngeal mucosa were blood stained. And the child was coughing continuously.

Investigations showed white blood cell count of 9, 200, hemoglobin of 8.9 g/dl, and platelet count of 330, 000. Chest X-ray was done and was normal.

A clinical suspicion of leech infestation was made from the history and physical examination. And while kept at emergency the patient clinical condition was deteriorated and became tachypneic with air hunger and desaturated up to the extent of 72% with atmospheric air. After informing and getting consent from the families for possible tracheostomy and bronchoscopic leech removal the patient was taken to operation room.

Awake tracheostomy with local anesthesia was done and then general anesthesia given through the tracheostomy tube. Direct laryngoscope was advanced, larynx and hypopharynx examined. The findings were visible black mobile leech through the anterior glottis area having attachment at the anterior commissure and the other at the anterior subglottic area occupying around 75% of glottic opening ([Figure 1](#)).

Lidocaine was flushed over its attachment area and grasped with laryngeal forceps and removed alive and hemostasis secured. The removed laryngeal leech is visible, black, mobile and alive ([Video 1](#)).



**Figure I** The removed laryngeal leech pierced with the cannula needle.

The patient transfer to ward with stable vital signs. Three days after the operation the patient was decannulated and discharged home.

## Case Discussion

Leeches are rare blood-sucking endoparasites living in contaminated water and can cause potentially fatal complications.<sup>1</sup> Children in rural settings are at a risk for leech infestation as the leech gets access to the human body either by drinking or bathing with the infested water.

The leech may attach to the different part of the upper aerodigestive tract including the nasal cavity, nasopharynx, larynx, esophagus and the trachea.

When people are drink infested water, the leeches usually adhere to the mucous membrane and sucks the blood of the host.<sup>2</sup> The leeches have the ability to feed on a volume of blood nearly 10 times their own body weight after adhering and piercing the host's mucosa; a process which is painless owing to a local anesthetic released in the leech's saliva.<sup>3</sup>

The clinical presentation and the physical examination of leech infestation varies and it depends on the exact site of the leech in the upper alimentary canal or upper airway structure. The symptoms and signs might be epistaxis, bloody vomiting, coughing up blood, foreign body sensation in the upper aerodigestive tract. As laryngeal infestation is a life threatening condition and the patient may develop partial or sudden complete air way obstruction. In severe cases leeches lying in the larynx may present with air way obstruction and change of voice.<sup>4,5</sup>

Leech infestation in the upper respiratory tract should not be ignored in children presenting with epistaxis, bloody vomiting, coughing up blood, foreign body sensation in the upper aerodigestive anatomical structures and air way obstruction especially in rural areas where drinking water from the streams and ponds is common. Leeches can attach to the mucosa of the entire upper aerodigestive tract but a leech stuck in the larynx is rarely seen.<sup>5</sup> So far, there are only a few reports of living leeches stuck in the larynx causing upper air way obstruction and hemoptysis.<sup>6,8</sup>

When leech infestation is suspected in the upper aerodigestive tract evaluation under general anesthesia via direct laryngoscope is the preferred procedure of confirmation.

Once the direct laryngoscope is advanced the adhered leech in the mucosa of the aerodigestive structures can be removed with special cautions and care due to the strong adherence of its suckers.<sup>7</sup>

In our particular patient a clinical suspicion of leech infestation was made from the history and physical examination. The patient was taken to operation room after the air way was secured with tracheostomy direct laryngoscope examination under general anesthesia was done which showed visible leech at the glottis area closing the glottic opening. And the leech was removed with the forces and hemostasis secured. The patient was transferred to a ward with stable vital signs. Three days after the operation the patient was decannulated and discharged home.

In conclusion, laryngeal leech infestation should be kept in mind in the differential diagnosis of upper air way obstruction especially in areas where drinking water from the streams and ponds is a habit. Direct laryngeal examination under general anesthesia is recommended to evaluate the aero-digestive tract and to remove the leech with forceps.

## Ethical Clearance

Written informed consent for publication of their details, including the intraoperative image and video, was obtained from the parents. In addition, ethical clearance was obtained from the institutional review board of Tikur Anbessa hospital and Addis Ababa University for publication.

## Disclosure

The authors report no conflicts of interest in this work.

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