

# Nasal Hirudiniasis: An Uncommon Cause of Unilateral Nasal Obstruction and Epistaxis

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## ABSTRACT

Leech infestations are known as hirudiniasis.<sup>1</sup> Leeches are blood-sucking hermaphroditic parasites that vary in color and range in length from a few millimeters to half a meter. They enter the human body through drinking water, and localize on the mucosa of the upper aerodigestive tract.<sup>2</sup> In this paper, we present a case with one month history of intermittent epistaxis and nasal obstruction. The cause was found to be a leech in the nose by means of endoscopic examination. We used an easy method to remove the parasite.

**Keywords:** *Hirudo medicinalis*, Hirudin, Lidocaine.

## INTRODUCTION

The leech is an endoparasite for man. Leech infestation primarily occurs in tropical areas, such as in Mediterranean countries, Africa and Asia.<sup>3</sup> Still used in Europe and United States by the surgeons for their properties that make them useful when the venous tissue is compromised; the leech merit its name, *Hirudo medicinalis*. Because of their saliva containing an anticoagulant and a histamine like vasodilator, they are useful to provide critical venous outflow for compromised tissue replantations and transfers that might otherwise be unsalvageable.<sup>4</sup> However, as a parasite, it has the potential to cause serious or even lethal complications, though it is rare. Leech infestation in nose, paranasal sinuses and nasopharynx can be an unusual cause of epistaxis and nasal obstruction. We report a case of leech infestation of nose and an easy method of its removal.

## CASE REPORT

A 35-year-old lady presented to our outpatient department with one month history of right sided nasal obstruction and intermittent epistaxis. She also had an itchy sensation of a moving foreign body in the right nostril for past one month. She suspected that there might be a live insect in her nose. She denied any history of nasal allergies, chronic paranasal sinusitis or other medical conditions. She also reported that she had washed her face in a fresh water spring one month prior to the onset of symptoms. Anterior rhinoscopy with a headlight showed a brownish red foreign body in the nasal cavity. This was confirmed with nasal endoscope. A living foreign body, like a worm, was suspected due to the twisting and moving of the object itself. Only part of the foreign

body was seen through the nasal endoscope, and the head or the anchoring part of the worm could not be approached. Direct extraction of the worm with a Tilley's (nasal packing forceps) was unsuccessful because of its slippery nature. So, 10% xylocaine nasal spray was applied to the right nasal cavity to anesthetize the worm and facilitate removal. After 5 minutes, the worm was visualized with a 4 mm nasal endoscope and retrieved with a Blakesley forceps. The worm was confirmed to be a leech. It was dark brown in color with a larger posterior and a smaller anterior sucker (Fig. 1). It measured about 7 cm long and 1 cm wide at rest and was actively mobile with an "inch-worm" like crawling motion. A check endoscopy of the bilateral nasal cavities confirmed complete removal. One month later, there were no other parasites found during follow-up.

## DISCUSSION

Leeches are classified as a species of phylum Annelida and leech infestations are known as hirudiniasis.<sup>1</sup> These parasites



**Fig. 1:** Dark brown colored leech with large posterior and small anterior sucker

live in quiet pools and streams. Human infestation occurs either due to swimming in or drinking water from such streams. Once it gains entry into the body, the leech may lodge anywhere along the upper airway or in the alimentary tract. Frequent sites include the nose, pharynx, epiglottis, larynx and upper trachea.<sup>1,3,5,6</sup> Leeches can affix themselves to mucous membranes with their suckers, sucking blood through their mouth. The mouth has three cutting plates, which penetrate the body at the site of attachment. The saliva of a leech contains hirudin, which inhibits thrombin, factor IXa and other enzymes.<sup>3</sup> These anticoagulants can allow the leech to feed freely from the insertion site. Leeches bite warm surfaces and ingest blood meals averaging 89% of their weight. Leech infestation has not been mentioned as a cause of epistaxis in standard textbooks.<sup>7</sup> Because leech bites are painless, the infestation remains symptomless until a warning sign appears. The most common presentation of aquatic leech endoparasitism is nasal infestation with recurrent unprovoked epistaxis.<sup>8</sup> However, the presence of leech in nasal cavity or nasopharynx has been reported in limited number of articles. Epistaxis, nasal obstruction, and sensation of a moving foreign body are the usual presenting complaints of a leech in the nose.<sup>1</sup> Leeches in the larynx may present with hemoptysis, hoarseness, or dyspnea.<sup>1,3,5</sup>

The possibility of leech endoparasitism should not be overlooked in patients (especially children) presenting with epistaxis or hemoptysis and a history of recent contact with freshwater lakes or streams in areas where aquatic leeches are commonly found.<sup>6,9</sup> Diagnosis is easy when the leech is in the nasal cavity. However, when lodged in the nasopharynx, an examination under general anesthesia, especially for small children, may be required. In this location, a differential diagnosis with other nasopharyngeal lesions, such as antrochoanal polyp, malignant tumors, juvenile nasopharyngeal angiofibroma is necessary.

Removal of a leech requires special care and the utmost gentleness because it attaches strongly with its suckers. Due to its soft and slippery body surface, which ruptures easily, it is difficult to hold a leech with forceps. Firm traction should not be used to detach a leech, because this can leave some of the mouth parts behind, leading to persistence of bleeding and secondary infection.<sup>10</sup> If it is in the nares or upper pharynx, it can be paralyzed with cocaine and extracted directly.<sup>11</sup> As an alternative to cocaine, as in our case, topical anesthetic agents, such as lidocaine, are effective to paralyze the leech. If it is in the larynx, hypopharynx or lower pharynx, direct laryngoscopy is essential under general anesthesia, both for diagnosis and removal of the leech. This case should be considered as an emergency and all precautions should be taken to avoid suffocation. Another way of removing the leech from nasal cavity is to inject it with 4% lidocaine solution which

effectively anesthetizes the parasite.<sup>12</sup> Alternatively, a kidney tray filled with water may be kept just below the nasal vestibule of the patient.<sup>13</sup> As soon as the leech approaches the water, it can be retrieved with an artery forceps. Although more time consuming, this method is particularly comfortable for the patient.

## CONCLUSION

The presence of a leech in the nasal cavity should be included in the differential diagnosis of patients presenting with epistaxis, nasal obstruction, and itchy sensations of the nose, especially during leech season (from May to September), even if the patient is not living in an endemic area. Removal can be done with or without the endoscope under local anesthesia. However, general anesthesia may be required in children and in cases where removal under local anesthesia fails.

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