



Mucosal hirudiniasis presenting as palatal mass: A case report and review of the literature

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ABSTRACT

This paper presents the case of a 5-year-old child who presented with an 15-day history of a swelling over the palatal region and blood stained saliva. Intraoral examination showed dark red circular mass rising from the hard palate. Diagnosis of mucosal hirudiniasis have been made. The parasite has been extracted under local anesthesia using a blunt forceps, it has been identified as an adult *Limnatis nilotica*. Leech endoparasitism must be suspected in case of bleed from throat, dysphagia or any other related symptom, especially in pediatric patients who have been exposed to freshwater. Prevention remains the best medicine.

1. Introduction

Leeches belong to the Annelida phylum and Hirudinea class. Nearly 700 species have been described. The majority of leeches live in freshwater habitats, while some species can be found in terrestrial or marine environments [1]. Bloodsucking species have jaws in the anterior sucker that contain sharp teeth for biting. Leech infestation occurs generally when people drink or bathe in infested waters such as streams or lakes [2]. They are naturally adapted to an ectoparasitic mode of life. Some rare cases of human endoparasitism have been reported, a condition known as mucosal hirudiniasis. Clinical presentation depends on the localization of the leech. Severe complications can be associated [3]. We report the case of an oral hirudiniasis with an unusual presentation.

2. Clinical presentation

A 5-years-old boy was brought by his parents to our ENT department with a 15 days history of a swelling over the palatal region and a small amount of bloody sputum. The patient did not complain of any other symptoms. There is no history suggestive of any mental or physical illness. He lives in a rural region, using unfiltered water from the spring.

On presentation, he was afebrile, eupneic with oxygen saturation (SpO₂) of 98% on room air.

Mild conjunctival pallor was noted. Vital signs were notable for respiratory rate 29, heart rate 116, and pressure at 103/65 mmHg. Intra

oral examination revealed a dark red circular tender mass, measuring 20 mm in maximum diameter rising from the hard palate (Fig. 1).

In the initial assessment of the patient, inflammatory, infectious, developmental and neoplastic abnormalities, especially hemangioma have been considered. Palpation of the mass by tongue depressors revealed spontaneous movements and uncovered the nature of the mass: it was a leech hanging by its anterior sucker.

Complete blood count results showed a hemoglobin value of 10.2 g/dl, with a mean corpuscular volume of 65fl and a mean corpuscular hemoglobin content of 28,5 pg.

The intervention was performed by our senior resident. Extraction of the parasite was performed without any incident using forceps, after local anesthesia with lidocaine. Examination of the specimen revealed a leech of 6cm long axis (Fig. 2). Minimal bleeding persisted 30 minutes after the leech was extracted. (Fig. 3).

The child was put under observation status for 24 hours, and was discharged home after good clinical outcome.

The leech has been identified as an adult *limnatis nilotica*.

The patient was reevaluated 1 month later, he was asymptomatic. Parents were educated toward the danger of drinking or bathing in unfiltered water, in order to avoid occurrence of similar episodes.

This case has been reported in line with the SCARE criteria [4].

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Fig. 1. Patient at the time of presentation.



Fig. 2. The leech specimen.



Fig. 3. Patient after extraction of the leech.

3. Discussion

Leeches belong to the Annelida phylum and Hirudinea class. Nearly 700 species have been described. The majority of leeches live in freshwater habitats, while some species can be found in terrestrial or marine

environments. They are segmented worms. Depending from the species, the length of the body of a leech ranges from 1cm to 30cm. A leech has two suckers, one at each end. The mouth lies within the anterior sucker. Bloodsucking species have jaws in the anterior sucker that contain sharp teeth for biting [1,5].

To date, 20 species and subspecies of hirudinida belonging to 11 genera and 5 families have been identified and described in Morocco, based upon records in the literature. Many areas have not yet been explored in terms of leech fauna, therefore the discovery of new species is still expected. *Limnatis nilotica* it is the most widespread leech in morocco [6]. Adult specimens are up to 12cm long. The general color pattern is dark green with green spots in rows on the dorsal surface and two oranges stripes laterally [7].

Leech infestation occurs generally when people drink or bathe in infested waters such as streams or lakes. Almost all cases have been reported from developing countries [2].

Clinical presentation depends on the localization of the leech. The upper aerodigestive tract is the most frequent site of infestation, and epistaxis is the most common sign encountered [7]. Associated symptoms include hoarseness, hemoptysis, hematemesis and dysphagia [2]. Fatal cases of dyspnea can occur in case of airway obstruction [8]. Other sites of infestation include vagina [3], urethra [9], conjunctiva [10] and gastro intestinal tract [11]. We report what is, to our knowledge, the first documented case of mucosal hirudiniasis presenting in this manner.

Aquatic leeches are dangerous as they can ingest an amount of blood up to 10 times their weight, and can therefore cause severe cases of anemia, especially in children [12]. In the study carried out by Zaki et al. Blood count was performed in 53 patients. It showed hypochromic microcytic anemia in 41% of cases, including a severe form at 6 g/dl in a 5-year-old child [13].

Our patient presented with flow of fresh blood into the oral cavity. This manifestation is explained by hirudin, which is a naturally occurring enzyme in the saliva of blood-sucking leeches that has a blood anticoagulant property [5].

The extraction of leeches must be carried out in a careful and atraumatic fashion, the leech can be firmly attached to the mucosa. In case of parasite rupture, all body fragments must be extracted to avoid continuous blood loss [12].

In case of accessible location as in our patient, the use of lidocaine paralyzes the leech making its extraction easier. The use of blunt forceps is advisable. However, in case of lower localization eg: larynx, hypopharynx, direct laryngoscopy under general anesthesia must be considered in order to secure the airways and avoid any incident. Sevoflurane mask induction of anesthesia has a similar effect to lidocaine; and thus facilitates its extraction [2].

Some anecdotal and individual recommendations for leech removal have been reported in the literature. However, there is insufficient data available to compare different techniques [14].

4. Conclusion

In summary, leech infestation is a benign condition, but which can sometimes be life-threatening for patients. We would like to emphasize the importance of prevention, thus a comprehensive approach to reducing leech infestation is necessary. Some elements are to consider [15,16]:

- Promote awareness campaigns regarding the importance of safe drinking water.
- Support for teachers, mayors, and families through training and educational activities.
- Simple technical solutions, adapted to the context (cost) and demand, to improve sanitation and hygiene.

Ethical approval

Written informed consent was obtained from the patient's parent for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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Author contribution

Walid BIJOU: Corresponding author writing the paper, Rabii LAA-BABSI : Writing the paper, Adil LEKHBAL : Correcting the paper, Youssef OUKESSOU : study concept, Samid ROUADI : study concept, Reda ABADA : Correcting the paper, Mohamed ROUBAL : Correcting the paper, Mohamed MAHTAR : Correcting the paper

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None

Declaration of competing interest

The authors declare having no conflicts of interest for this article.

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