An unusual cause of chest discomfort: case report of oesophageal hirudiniasis

Cristóvão Figueiredo¹ · Joana Alves¹ · Cláudia Carvalho¹ · António Sarmento¹

Received: 10 May 2016 / Accepted: 20 August 2016 / Published online: 29 August 2016
© Indian Society for Parasitology 2016

Abstract Hirudiniasis is caused by sanguivorous leeches feeding on mucous membranes with possible severe obstructive or haemorrhagic manifestations. Few cases have been reported in humans, and most occur in tropical countries. A seventy-year-old female patient presented to our Emergency Department (ED) with retrosternal discomfort. She was taking warfarin for a mechanical prosthetic heart valve. While in the ED, a leech was spontaneously extruded from her mouth, with symptomatic resolution. Endoscopy revealed an area of previous leech attachment in the distal oesophageal, without severe bleeding. Albeit uneventful, this case could have had a devastating outcome.

Keywords Leech · Hirudiniasis · Oesophagus · Chest discomfort

Introduction

Leeches (Annelida: Clitellata: Hirudinida) species that commonly infest humans include *Dinobdella ferox*, *Poecilobdella granulosa* and *Poecilobdella viridis* (Kani et al. 2014). Leeches are found worldwide, living mostly in fresh water, and occasionally enter human orifices—a condition known as mucosal, orifice, vesical or internal hirudiniasis, depending on the localization of the leech (Phillips et al. 2010, Sawyer

1986). Mucosal hirudiniasis is a rarely reported occurrence in Portugal. We report the case of a patient with oesophageal hirudiniasis that presented to our hospital.

Case report

A seventy-year-old female patient went to the Emergency Department (ED) complaining that she felt a retrosternal discomfort for the past 3 weeks, which she described as “something moving up and down”.

Her past medical history was relevant for obesity, hypertensive heart failure (usually in class II–III of New York Heart Association), aortic valve replacement with a mechanical prosthesis (for which she was taking warfarin) and chronic obstructive pulmonary disease (controlled with bronchodilators only, without steroid therapy).

She was born in Portugal and had never travelled abroad. She lived in a rural area but denied contact with animals or outdoor activities; in fact, she was mostly confined to her home due to exertion dyspnoea. She only drank tap or bottled water, and didn't recall eating any homemade processed food. However, she used to consume raw vegetable products (lettuce and other salad components) that were acquired in traditional markets. Family members denied any similar symptoms.

The physical examination was unremarkable, apart from a audible “click” in heart auscultation attributable to the prosthetic heart valve. While she was in the ED, a dark-coloured parasitic worm 6 cm in length was spontaneously extruded from her mouth (Figs. 1 and 2).

Ear–nose–throat (ENT) evaluation and bronchofibroscopy were unremarkable. Endoscopy revealed areas on the distal oesophagus that macroscopically resembled gastric heterotopia (Fig. 3). No parasites or foreign bodies

✉ Cristóvão Figueiredo
csmfigueiredo@gmail.com

¹ Infectious Diseases Department and Faculdade de Medicina da Universidade do Porto, Centro Hospitalar São João, Alameda Professor Hernâni Monteiro, 4200-319 Porto, Portugal

Fig. 1 Leech spontaneously extruded from the patient's mouth

Fig. 2 Leech with a tympanic thermometer for scale comparison

were observed. International normalized ratio was 2.2, and although she had a self-limited upper digestive tract bleeding, no anticoagulant reversion was required. She was discharged home for outpatient follow-up.

Mucosal hirudiniasis was diagnosed, although the species could not be ascertained. The patient was reevaluated 2 weeks later, denying any other bleeding episodes. The retrosternal discomfort had completely resolved.

Discussion

Leeches are haemophagic ectoparasites that occasionally can cause skin or mucosal disease in several animals, including mammals (Cundall et al. 1986; García et al.

Fig. 3 Upper digestive endoscopy showing areas macroscopically resembling gastric heterotopia on the oesophagus (white arrow), where the leech was presumptively attached

2002; Phillips et al. 2010; Sawyer 1986; Uygun et al. 2003; Verma et al. 2011). Mucosal hirudiniasis is a rare cause of bleeding or obstruction (Cundall et al. 1986; García et al. 2002; Uygun et al. 2003; Verma et al. 2011), with most cases being reported in patients that have been in contact with moist environments that serve as leech habitat, such as lakes or slow-moving streams. Our case was particularly intriguing since it occurred in a patient mostly confined to her home, with no epidemiologic clue apart from the fact that she consumed raw vegetables. It is possible that our patient acquired it through ingestion of a small leech that was unnoticed.

Most cases can be treated with careful removal of the leech (Uygun et al. 2003; Verma et al. 2011); since sanguivorous leeches produce anticoagulants (Kvist et al. 2013; Koh and Kini 2009), which play an important role in feeding (Sawyer 1986), severe bleeding can occur after removal. Our patient was taking a vitamin K inhibitor, which could have led to a severe digestive bleeding as previously reported (Cundall et al. 1986). Fortunately this did not occur, and the spontaneous clearance of the parasite allowed a fast diagnosis of an extremely rare cause of retrosternal discomfort.

Author contributions C.F., J.A. and C.C. were responsible for the patient management. C.F. and J.A. have drafted the manuscript. C.C. and A.S. have reviewed the manuscript and gave meaningful contributions.

Compliance with ethical standards

Conflicts of interest The authors declare that they have no competing interests.

References

- Cundall DB, Whitehead SM, Hechtel FO (1986) Severe anemia and death due to the pharyngeal leech, *Myxobdella africana*. Trans R Soc Trop Med Hyg 80:940–944
- García AC, Martín AM, De Luna Gijón CA, Martín Anaya AS, Mondéjar AR (2002) Leech in the epiglottis: an unusual discovery in our times. Am J Otolaryngol 23(2):91–92
- Kani HT, Aydin Y, Yalcin N, Kaymakci M, Akin H (2014) Hypopharyngeal hirudiniasis presenting as hematemeses. Endoscopy;46 Suppl 1, UCTN:E550. doi:[10.1055/s-0034-1377954](https://doi.org/10.1055/s-0034-1377954)
- Koh CY, Kini RM (2009) Molecular diversity of anticoagulants from haemophagous animals. Thromb Haemost 102(3):437–453. doi:[10.1160/TH09-04-0221](https://doi.org/10.1160/TH09-04-0221)
- Kvist S, Min GS, Siddall ME (2013) Diversity and selective pressures of anticoagulants in three medicinal leeches (Hirudinida: Hirudinidae, Macrobdellidae). Ecol Evolut 3(4):918–933
- Phillips AJ, Arauco-Brown R, Ocegüera-Figueroa A, Gomez GP, Beltrán M, Lai YT, Siddall ME (2010) *Tyrannobdella rex* N. Gen. N. Sp. And the evolutionary origins of mucosal leech infestations. PLoS One 5(4):e10057. doi:[10.1371/journal.pone.0010057](https://doi.org/10.1371/journal.pone.0010057)
- Sawyer RT (1986) Leech biology and behaviour: feeding biology, ecology, and systematics, 1st edn. Oxford Science Publications, Oxford
- Uygur K, Yasan H, Yavuz L, Dogru H (2003) Removal of laryngeal leech: a safe and effective method. Am J Otolaryngol 24(5):338–340
- Verma R, Preetam C, Sikka K, Thakar A (2011) Nasal hirudiniasis: an uncommon cause of unilateral nasal obstruction and epistaxis. Clin Rhinol: Int J 4(1):51–52