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Research Article

A Case of Subglottic Leeches Detected by Gastroscopy

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Abstract

Leech infestations, caused by adaptable cold-blooded annelids, exhibit diverse clinical manifestations based on parasitic location and duration. Common in various Chinese provinces like Yunnan, Guizhou, and Sichuan, leeches inhabit freshwater environments such as lakes and swamps. Infestations lead to symptoms like reversible hoarseness, hemoptysis, foreign body sensation, and dyspnea due to glottic disruption and bleeding. This case study demonstrates how to diagnose and treat patients with confusing symptoms who ingest leeches while working on the farm. Diagnosis involves merging clinical acumen, specialized tools, and contextual information. Gastroscopy's role emerges as pivotal in diagnosis, resolving symptoms post-removal. This case underscores the importance of holistic diagnostic approaches and precise interventions to manage the complicated parasitic infestations effectively. This case highlights the complicated relationship between the patient's symptoms, medical history, endoscopic findings, and effective treatment measures.

Keywords: Leeches; Gastroscopy.

Introduction

Leeches, also known as *Hirudo*, are interesting creatures belonging to the leech family. These organisms predominantly thrive and reproduce in freshwater environments found inland. Their habitats include rice fields, ditches, shallow waters, and stagnant ponds with suboptimal cleanliness.

Leeches has a distinct affinity for feeding on the blood of both humans and animals, and moving from place of another in the body.

While leeches have been utilized in various traditional and medical practices (1–4), their presence as parasites capable of infesting the human body poses a risk to human health (5–7). Because of complexity of leech infestations, their clinical

manifestations, diagnostic approaches, and management it is essential to understand their location and the respective clinical complication. However, leech infestations are relatively uncommon in modern society. As these blood-sucking organisms can infest any part of the human body, accurate identification / diagnosis and localization become paramount. The diagnosis of leech infestations therefore, depends on the clinical evaluation, advanced imaging techniques, endoscopic examinations and laboratory assessments. In this context we report an exceptional case of subglottic leech infestation detected by gastroscopy at our hospital which highlights an unusual infestation. In addition, it also shows the value of gastroscopy in the diagnosis of subglottic leeches infestation.

Clinical data

The 67-year-old male farmer from Sixi Village, Anchi Township, Rong'an Town, Rongshui Miao Autonomous County, Liuzhou City, Guangxi Zhuang Autonomous Region, was admitted to the Department of Gastroenterology due to persistent upper abdominal pain and foreign body sensation in the throat for one month. The patient's other symptoms included paroxysmal dull pain below the xiphoid process, acid reflux, and a burning sensation in the upper abdomen. Although the pain was not related to eating and was not accompanied by symptoms like diarrhea, vomiting, fever, chest tightness, palpitations, cough and expectoration, however, the patient did experienced a foreign body sensation in the pharynx. The patient had undergone outpatient laryngoscopy which did not revealed any abnormalities. The objective of his admission to the department was for further investigation and treatment of the abdominal pain. The patient's had normal appetite, sleep, urine, and stool since the onset of the disease. Notably, there was no significant weight loss, and the patient's past medical history was unremarkable. At the time of admission, all vital signs were within acceptable

ranges (temperature: 36.6 °C, pulse: 62 beats/min, respiratory rate: 21 beats/min, blood pressure: 139/83 mmHg), with a normal mental state. Physical examination revealed no palpable superficial lymph nodes, normal skin and sclera coloration, slightly coarse breath sounds without dry or wet rales, regular heart rhythm without murmurs, and a flat and soft abdomen. The subxiphoid process exhibited a mild tenderness, and there was no rebound tenderness or palpable abdominal mass. The Murphy sign was is negative, and bowel sounds were normal.

The examination before admission, conducted on July 9, 2023, did not identify any abnormalities during outpatient laryngoscopy at the hospital. All laboratory investigations such as complete blood counts (CBC), blood coagulation function tests, liver function tests (LFT), renal function tests (RFT), carcinoembryonic antigen (CEA) test, and routine urine and stool tests were normal. On July 10, 2023, a routine gastroscopy was conducted. During the procedure, the endoscope was inserted into the throat, revealing the presence of brown worms at the entry to the glottis close to the posterior tracheal wall (Fig. 1A). The worm was observed wriggling its way towards the trachea (Fig. 1B). Further inquiry into the patient's medical history uncovered that the individual frequently consumed water from streams or mountain springs in the valley while engaging in farm work. Notably, the patient experienced symptoms one month ago, including epigastric pain, a foreign body sensation in the throat, and a sensation of crawling. Combining with the medical history and endoscopic finding leech infestation was strongly suspected. However, due to the risk of provoking the leech to move deeper into the trachea during gastroscopy and potentially causing suffocation, an alternative approach was applied. In this, the respiratory department did conduct a bronchoscopy that revealing a brown motile worm attached to the upper portion of the main bronchus (Fig. 2). After the injection of tetracaine, the leech was taken out smoothly by clamping techniques (Fig. 3). The

following day, a gastroscopy was performed, uncovering several gastrointestinal conditions including chronic non-atrophic gastritis with erosion, hiatal hernia, reflux esophagitis (LA-B grade), and a duodenal ulcer (S2 stage). It was deduced that the leech infestation caused the foreign body sensation in the pharynx through

adsorption and peristalsis of the worms. Subsequent removal of the leeches resulted in the disappearance of the patient's pharyngeal discomfort and crawling sensation. 2 weeks after removing the leeches, we conducted a follow-up phone call with the patient, and they confirmed that their condition is good.

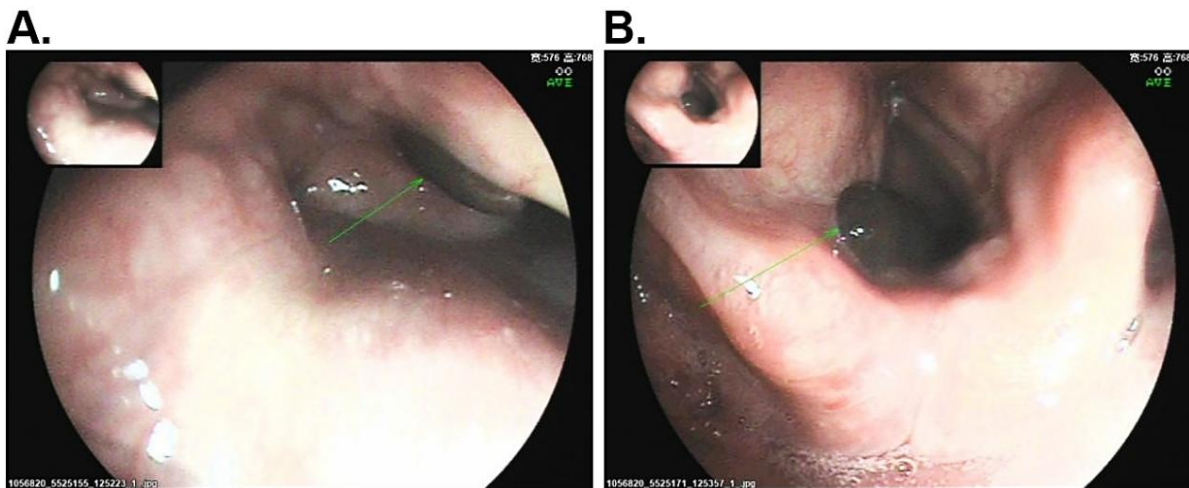


Figure 1. Gastroscopic visualization of the leech at glottis.
A. The brown leech at glottis. B. The leech wriggling toward the trachea.

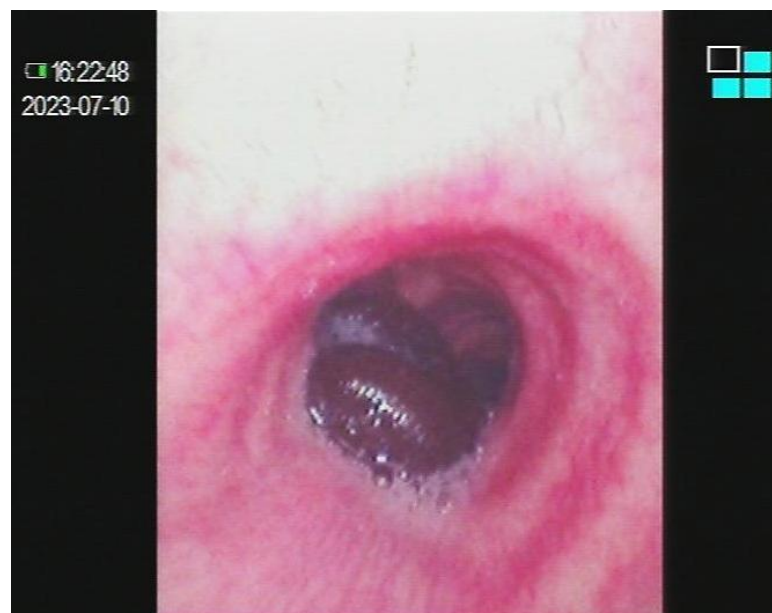


Figure 2. Bronchoscopic visualization of brown leech attached to the upper portion of the main bronchus.



Figure 3. The leech removed from the patient.

Discussion

Leeches, belonging to the class of cold-blooded annelids, exhibit a versatile ability to thrive and reproduce across both northern and southern regions of China. They are notably more prevalent in provinces such as Yunnan, Guizhou, Hunan, Hubei, Sichuan, Guangdong, Guangxi, and Fujian. Leeches primarily inhabit freshwater environments encompassing reservoirs, ditches, paddy fields, lakes, and swamps.

Subglottic leech infestation often causes a range of symptoms. These include paroxysmal reversible hoarseness, hemoptysis, foreign body sensation in the throat, and paroxysmal dyspnea which are attributed to the glottic closure and bleeding from blood-feeding sites. In this case, it appeared that the patient acquired the leech while consuming raw water that contained young leeches. The patient's symptoms of foreign body sensation in the throat, crawling sensation, and epigastric pain were initially confusing. However, a meticulous review of the patient's medical history and endoscopic examination facilitated the identification of leech infestation as the likely cause. In addition, patient's habit of consuming raw stream water and the presence of brown worms in the respiratory and gastrointestinal tracts correlated well.

Upon entering into the human body, leeches tend to settle in regions with restricted airflow, such

as the nasopharynx and upper nasal cavity. They can also infiltrate through choking water and become adhered to the tracheal wall. Subsequently, they grow by feeding on blood. There have been sporadic reports of leech infestation in China, all of which have been confirmed by laryngoscopy or bronchoscopy (8–11). Interestingly, despite the patient's clinical presentation, outpatient laryngoscopy failed to detect the presence of leeches. This could be attributed to the movement of leeches in the pharynx, upper trachea, and upper oesophagus. Their erratic movement might be the cause not detecting the leech during the initial laryngoscopy. The subsequent gastroscopy detected the brown worm and the successful removal of the leeches led to the resolution of the patient's symptoms, highlighting the pivotal role of accurate diagnosis and appropriate intervention.

In conclusion, the discussed case provides the insights into the diagnosis of leech infestations at an unusual site of body showing the value of gastroscopy in diagnosing the leech infestation.

Declarations

1) *Consent to publication*

We declare that all authors agreed to publish the manuscript in this journal based on the signed Copyright Transfer Agreement and followed publication ethics.

2) *Ethical approval and consent from*

participants

This study was approved by the ethical committee of the hospital. The informed consent was taken from the participants.

3) Disclosure of conflict of interests

We declare that no conflict of interest exists.

4) Funding

None

5) Availability of data and material

We declare that the data supporting the results reported in the article are available in the published article.

6) Author Contribution

Authors contributed to this paper with the design (GSL), literature search (GSL, AQD and XJL), drafting (GSL), revision (GSL, AQD and XJL), and editing (GSL, AQD and XJL) and final approval (GSL, AQD and XJL).

7) Acknowledgement

None.

8) Author biography

None.

References

- Mousavian A, Sabzevari S, Parsazad S, Moosavian H. Leech Therapy Protects Free Flaps against Venous Congestion, Thrombus Formation, and Ischemia/Reperfusion Injury: Benefits, Complications, and Contradictions. *Arch Bone Jt Surg* 2022;10(3):252–60. <https://doi.org/10.22038/ABJS.2022.55013.2736>
- Singh SK, Rajoria K. Medical leech therapy in Ayurveda and biomedicine – A review. *J Ayurveda Integr Med* 2020;11(4):554–64. <https://doi.org/10.1016/j.jaim.2018.09.003>.
- Pickrell BB, Daly MC, Freniere B, Higgins JP, Safa B, Eberlin KR. Leech Therapy Following Digital Replantation and Revascularization. *J Hand Surg* 2020;45(7):638–43. <https://doi.org/10.1016/j.jhsa.2020.03.026>
- Davoodi F, Taheri S, Raisi A, Rajabzadeh A, Zakian A, Hablolvarid MH, et al. Leech therapy (*Hirudo medicinalis*) attenuates testicular damages induced by testicular ischemia/reperfusion in an animal model. *BMC Vet Res* 2021;17(1):256. <https://doi.org/10.1186/s12917-021-02951-5>
- Nur AM, Gorfu ZT. Upper GI Bleeding Due to Leech Infestation in Ethiopian Patients: A Case Series and Review of Literature. *Int Med Case Rep J* 2022;Volume 15:677–80. <https://doi.org/10.2147/IMCRJ.S381990>
- Reihani H, Ghanei-Shahmirzadi A, Salehi S, Ansari-Charsoughi N, Karbasian F, Imanieh M-H. Manifestation of leech infestation as severe gastrointestinal bleeding in a 3-year-old boy: a case report and review of the literature. *BMC Pediatr* 2022;22(1):704. <https://doi.org/10.1186/s12887-022-03778-1>
- Tuang GJ, Muhammad A, Zahedi FD. An Unusual Cause of Recurrent Epistaxis: Nasal Leech Infestation. *Ear Nose Throat J* 2023;102(1):NP1–2. <https://doi.org/10.1177/0145561320984561>
- Cheng Y, Li F, Chen G. A case of endotracheal leech extraction via fiberoptic bronchoscopy. *J Clin Pulm Med* 2018;32(2):374–5. <https://doi.org/DOI:10.3969/j.issn.1009-6663.2018.02.051>
- Zhang P, Zhang R, Zou J, Zhu T. A rare case report of tracheal leech infestation in a 40-year-old woman. *Int J Clin Exp Med* 2014;7(10):3599–601.
- He B, Gao Y, Huang X, Dao H, Xue Y. Clinical analysis of subglottic leech in 33 cases. *Chin J Community Physicians* 2016;32(7):34, 36. <https://doi.org/10.3969/j.issn.1007-614x.2016.7.18>
- Hou N, Lv D, Zhao K, Xu X, Yang W, Wang Y. A case of living leech in nasal cavity. *Otolaryngol Case Rep* 2021;19:100277. <https://doi.org/10.1016/j.xocr.2021.100277>.