INTRANASAL LEECH (HIRUDINIASIS) COMMON MODE OF PRESENTATION AND SITES OF LODGMENT

Khalid Azam Khan, Atif Rafique*, Sohail Babur**

Combined Military Hospital Muzaffarabad, *Combined Military Hospital Kohat, **PAF Hospital Sargodha

ABSTRACT

Objective: To assess the common mode of presentation and sites of lodgment in cases of nasal leech infestation.

Design: Descriptive study.

Place and Duration of Study: This study was conducted in the ENT Department of Shaikh Khalifa Bin Zayed Al Nahyan Hospital (CMH) Muzaffarabad from 10th Jan 2010 to 15th Feb 2012.

Patients and Methods: After getting informed consent, total of 70 cases that fulfilled the inclusion criteria i.e patients irrespective of age and gender with a positive history of epistaxis and use of spring water for daily utilities and especially after exclusion of other known causes for epistaxis were included in this study. A thorough history followed by ENT examination including nasal endoscopy was carried out in each case and site of lodgment of leech documented. This was followed by removal of leech from nose.

Results: The commonest mode of presentation of nasal leech was epistaxis (54.28%) and the commonest site of lodgment of leech was under the inferior turbinate (inferior meatus) (82.86%).

Conclusion: This rare cause of epistaxis should be kept in mind once all other common causes are excluded especially if the patient belongs to low socioeconomic group and using fresh spring water for their consumption. A thorough search in the region of inferior meatus should be under taken aided by nasal endoscope if available.

Keywords: Epistaxis, Nasal hirudiniasis, Nasal leech.

INTRODUCTION

Epistaxis is a common OPD presentation in ENT department. There are multiple causes of nose bleed (epistaxis), common ones being hypertension, nasal trauma, anatomical variation like deflected nasal septum or intranasal lesions. Myiasis (parasitic infestation) is also one rare cause of epistaxis.The scene of nose bleed is horrifying for the patient and it can even be life threatening if not controlled promptly.

Apart from the above mentioned causes this rare cause which may not be known to the young ENT surgeons should be kept in mind. These cases are commonly seen in Azad Jammu and Kashmir and some areas of Balochistan where fresh spring water is used for bathing and routine house hold work.

This study was conducted to see the common mode of presentation of parasite and secondly to study the common site of lodgment of this parasite in nose.

Correspondence: Maj Khalid Azam Khan, Classified ENT Specialist, CMH Muzaffarabad.
Email: sajurhagu@hotmail.com
Received: 04 Oct 2012; Accepted: 11 Feb 2013

PATIENTS AND METHODS

Approval was taken from hospital ethical committee. This descriptive study was conducted at ENT Department, Shaikh Khalifa Bin Zayed Al Nahyan Hospital (CMH) Muzaffarabad, from 10th Jan 2010 to 15th Feb 2012.

Total of 70 cases who fulfilled the inclusion criteria i.e patients irrespective of age and gender with a positive history of epistaxis and use of spring water for daily utilities and especially after exclusion of other known causes for epistaxis were included in this study. Those patients with infested sites other than nose and cause other than parasite infestation (leech) were excluded from the study[1,2]. A thorough nasal examination was carried out in OPD for every case to diagnose as some patients were totally unaware of the cause of bleed especially the children, followed by nasal endoscopy which was carried out in short acting general anesthesia for children and

local anesthesia for adults. After documenting the site of lodgment, leech was removed anteriorly from nares or posteriorly from nasopharynx via oral cavity (Figure-1). In most of the cases bleed was minimal and no nasal packing was required but in few, light nasal pack was placed for one day to secure bleed. In all cases the removal was accomplished in one go except one where piecemeal removal was carried out. No prior measures like use of salt, soap, chemicals such as alcohol, vinegar, lemon juice, insect repellent, heat rub, or certain carbonated drinks were used to remove the leech as traditionally practiced. Data was analyzed using software SPSS-11. Descriptive statistcs were used to describe the results.

RESULTS

Total of 70 patients were admitted with nasal Hirudiniasis. Fifty five (78.57%) cases were less than 12 years of age while 15 (21.42%) were adults. Twenty two (31.42%) were female and 48 (68.57%) were males.

Regarding the mode of presentation (Figure-2), 38 (54.28%) presented with epistaxis (unilateral). Out of these 38 patients, 11 (28.95%) were unaware of the fact that they are having intranasal leech. Unilateral nasal obstruction was the main presenting complaint in 10 (14.28%) cases. Fifteen (21.42%) cases were having feeling of some thing moving inside their nose (foreign body sensation). Seven (10%) were having vague complaints especially irritation, pain or hyposmia.

Regarding the site of lodgment of parasite (table-1), 58 (82.86%) were removed from inferior meatus, 7 (10%) were removed from middle meatus, 5 (7.14%) were attached to the floor of nose. Here it is worth mentioning that in 3 cases the leech was attached to posterior pharyngeal wall. Two were removed from hypo pharyngeal region. These were excluded from the study right from the start.

DISCUSSION

Leeches are annelids comprising the subclass Hirudinea. There are freshwater, terrestrial, and marine leeches. Like the oligochaeta, they share the presence of a clitellum. Like earthworms, leeches are hermaphrodites.

Haemophagic leeches attach to their hosts and remain there until they become full, at which point they fall off to digest. A leech's body is composed of 34 segments. They all have an anterior (oral) sucker (Figure-3) formed from the first six segments of their body, which is used to connect to a host (Figure-4) for feeding, and also release an anesthetic to prevent the host from feeling the leech. They use a combination of mucus and suction (caused by concentric muscles in those six segments) to stay attached and secrete an anti-clotting enzyme, hirudin, into the host's blood stream[3].

Though certain species of leeches feed on blood, not all species can bite; 90% of them solely feed off decomposing bodies and open wounds of amphibians, reptiles, waterfowl, fish, and mammals (including, but not limited to, humans). A leech attaches itself when it bites, and it will stay attached until it has had its fill of blood. Due to an anticoagulant (hirudin) that leeches secrete, bites may bleed more than a normal wound after the leech is removed. The effect of the anticoagulant will wear off several hours after the leech is removed and the wound is cleaned.

Leeches normally carry parasites in their digestive tract which cannot survive in humans and do not pose a threat. However, bacteria, viruses, and parasites from previous blood sources can survive within a leech for months, and may be retransmitted to humans. A study found both HIV and hepatitis B in African leeches from Cameroon[4].

Common but medically inadvisable techniques to remove a leech are to apply a flame, a lit cigarette, salt, soap, or a chemical such as alcohol, vinegar, lemon juice, insect repellent, heat rub, or certain carbonated drinks. These cause the leech to regurgitate its stomach contents into the wound and quickly detach causing some bleed from the site of attachment[5].

However, the vomit may carry disease, and thus increase the risk of infection[6-8].

An externally attached leech will detach and fall off on its own when it is satiated on blood, which may be anywhere from 20 min to 2 hours or more. Usually an hour is needed after finishing his dinner the leech will detach and move away or just roll off that portion of the body[8]. Internal attachments, such as nasal passage or vaginal attachments, are more likely to require medical intervention[9,10].

Some people suffer severe allergic or anaphylactic reactions from leech bites, and require urgent medical care. Symptoms include red blotches or an itchy rash over the body, swelling away from the bitten area (especially around the lips or eyes), feeling faint or dizzy, and difficulty breathing[8].

Regarding prevention there is no guaranteed method of preventing leech bites in leech-infested areas. The most reliable method is to cover exposed skin. The effect of insect repellents is disputed, but it is generally accepted that strong (maximum strength or tropical) insect repellents do help prevent bites.

Leech socks can be helpful in preventing bites when the full body will not be at risk of contact with leeches. Leech socks are pulled over the wearer's trousers to prevent leeches reaching the exposed skin of the legs and attaching there or climbing towards the torso. The socks are generally of a light color that also makes it easier to spot leeches climbing up from the feet and looking for skin to attach to.

There are many home remedies to help prevent leech bites. Many people have a great deal of faith in these methods, but none of them have been proven effective. Some home remedies include: a dried residue of bath soap, tobacco leaves between the toes, pastes of salt or baking soda, citrus juice, neem oil and eucalyptus oil. Diluted calcium hydroxide may also be used as a repellent, but may be damaging or irritating to the skin. One other remedy commonly practiced in the western parts of southern India is castor oil mixed with snuff powder, or powdered tobacco.

Table-1: Site of lodgment of the intranasal leech.

Site of lodgment	n (%)
Inferior meatus of the nose	58 (82.86)
Middle meatus of the nose	7 (10)
Floor of the nose	5 (7.14)

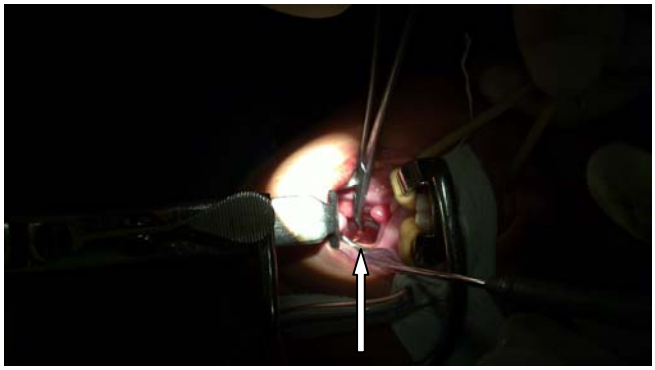

Figure-1: Nasal leech being removed from the postnasal space via oral cavity with warm curved artery forceps.

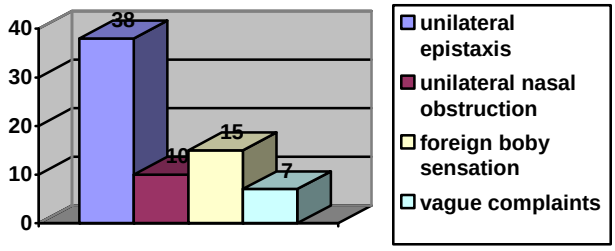

Figure-2: Mode of presentation of the symptoms.

The use of leeches in modern medicine made its comeback in the 1980s after years of decline, with the advent of microsurgery such as plastic and reconstructive surgeries. In operations such as these, one problem that arises is venous congestion due to inefficient venous drainage. Sometimes because of the technical difficulties in forming an anastomosis of a vein, no attempt is made to re-attach a venous supply to a flap at all. This condition is known as venous insufficiency. If this congestion is not cleared up quickly, the blood will clot, arteries that bring the tissues their

necessary nourishment will become plugged and the flap will necrose (flap failure). To prevent this leeches are applied to a congested flap and a certain amount of excess blood is consumed before the leech falls away. The wound will also continue to bleed for a while due to the anticoagulant (hirudin) in the leeches' saliva. The combined effect is to reduce the swelling in the tissues and promoting healing by allowing fresh, oxygenated blood to reach the area[11].

The active anticoagulant principle of leech saliva is a small protein, hirudin. Discovery and isolation of this protein led to a method of producing it by recombinant technology. Recombinant hirudin is available to physicians as an intravenous anticoagulant preparation for injection, particularly useful for patients who are allergic to or cannot tolerate heparin.

Leeches are commonly seen dwelling in nose of children depending on spring water for bathing and drinking purpose. This condition is common for Neelum valley where the population is dependent on rain fall and spring water. The valley is also having thick forest. Total of 70 patients were admitted with nasal Hirudiniasis reporting from valley. Fifty five (78.57%) cases were less than 12 years of age 48 (68.57%) were males.

It is normally possible to get hold of leech while doing anterior rhinoscopy but if the first attempt fails then the leech usually retracts it body and disappears deep in nose requiring posterior Rhinoscopy or nasal endoscopy. Care should be observed to pack the throat while removing it under general anesthesia or it may fall back into the digestive tract[12-15]. It is recommended to warm the instrument before grasping the Leech which helps to loosen up the grip (suction) of the Leech.

There is a traditional method of removing the leech from nose which is followed by the local natives of the valley. They put a pot full of water with some mud in it under the nose and wait for the leech to drop in the pot as they claim that the smell of mud along with water is more inviting for the Leech but this process may take time, may be more than an hour and is not always successful.

Figure-3: Leech with segmented body and sucker at one end.

Figure-4: Nasal leech firmly attached with glove after removal from the postnasal space.

At the end it is worth mentioning that such study has been carried out in past in Kashmir region addressing only the mode of presentation but due to the increase influx of these cases and the variation in disease presentation it was again conducted with the aim of not only addressing the commonest modes of presentation but also the sites of lodgment of this parasite.

CONCLUSION

This rare but important cause of epistaxis should be kept in mind when treating a case of epistaxis especially when all other common causes are excluded and a thorough search in the region of inferior meatus should be carried out. Hence, in tropical regions, animate foreign bodies should be considered in the differential diagnosis of epistaxis.

REFERENCES

1. Bilgen C, Karci B, Uluöz U. A nasopharyngeal mass: leech in the nasopharynx. Int J Pediatr Otorhinolaryngol. 2002 May 31; 64(1): 73-6.

2. Hamid MS, Mohd Nar GR. Severe urological complication of leech bite in the tropics. Br J Urol 1996; 77: 164-5
3. White GB. Leeches and leech infestation, in Cook GC, Manson's tropical diseases, 20th ed. London: Saunders; 1998. p. 1523-5.
4. West, AM, Smith DS. Myiasis. Hum Bio 103. Parasites and pestilence: infectious public health challenges. Program in Human Biology, Stanford University.
5. Ghimire A, Acharya A. Unusual cause of unilateral epistaxis: nasal leech infestation. JNMA J Nepal Med Assoc. 2008; 47(169): 38-40.
6. Golz A, Zohar S, Avraham S, Joachims HZ, Danino J, Merzbach D et al. Epistaxis caused by leeches Harefuah. 1989; 117(5-6):141-3.
7. Waleem SSU, Ullah S. Nasal Hirudiniasis- an unusual cause of epistaxis. J Ayub Med Coll Abbottabad 2010; 22(1): 46-8.
8. Satyawati, Singhal SK, Dass A. Multiple live leeches from nose in a single patient – A rare entity. Indian Journal of Otolaryngology and Head and Neck Surgery, 2002; 54(2): 154-155.
9. Adhikari P. Nasal leech infestation in children: comparison of two different innovative techniques. Int J Pediatr Otorhinolaryngol. 2009; 73(6): 853-5.
10. Rao KP, Grover YK, Mitra AK. Nasal hirudiniasis. J Indian Med Assoc. 1986; 84(2): 55-6.
11. Labadi MH, Jamal MN. Leeches in the larynx. J Laryngol Otol. 1997; 111(10): 980-1.
12. El-Awad ME, Patil K. Haematemesis due to leech infestation. Ann Trop Paediatr. 1990; 10(1): 61-2.
13. Solomon E. Leech--an unusual cause of (laryngo-tracheal) obstruction. Ethiop Med J. 1991; 29(3): 141-2.
14. Al-Hadrani A, Debry C, Faucon F, Fingerhut A. Hoarseness due to leech ingestion. J Laryngol Otol. 2000; 114(2): 145-6.
15. Uygur K, Yasan H, Yavuz L, Dogru H. Removal of a laryngeal leech: A safe and effective method. Am J Otolaryngol. 2003; 24(5): 338-40.