Epistaxis Due to Leech Infestation in Nose: A Report of Six Cases and Review of Literature

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Abstract The aim of this study is to report unusual cause of epistaxis due to leech infestation in nose in hilly area and its management. The study was carried out for a period of 4 years (2008–2012) in a secondary level hospital in hilly area of Darjeeling, West Bengal, India with data collected from the OPD and Emergency register of the patients. This retrospective case series consisted of six cases. All the cases presented with unilateral recurrent epistaxis and foreign body nose. Anterior rhinoscopy revealed fleshy greenish brown mobile mass inside the nasal cavity which was removed by forceps. The animate foreign body was identified as leech in all the cases. To conclude, in hilly areas leech infestation can present as animate foreign body in nose and it should be considered as important cause of epistaxis.

Keywords Nasal leech · Animate foreign body · Anterior rhinoscopic removal

Introduction

Worldwide Otolaryngologist are pretty familiar with different foreign bodies of the aero-digestive tract and their symptomatology, identification and removal of foreign bodies remains a vital part of the training of ENT residents till date. As a disease per se, foreign body impaction apparently is a simple condition—easy to deal with. But still there are some situations where even the most experienced otolaryngologist face difficulty in diagnosing the nature of foreign body impacted in the human aero digestive tract. This case series demonstrates the presence of leech in the nasal cavity—a very rare animate foreign body of the nose. While maggot is the most commonly encountered animate nasal foreign body particularly in neglected and debilitated patients both in the developed and developing countries, nasal leech infestation is almost exclusively documented from the developing nations in the tropics.

Materials and Methods

The study was carried on for a period of 4 years from 2008 to 2012 in a secondary level hospital in the hilly regions of west Bengal, India. During the study period only six patients were diagnosed to be having leech infestation in the nasal cavity. Owing to the rarity of the condition, no exclusion criteria was set and all the patients having the condition were included in the series. Exhaustive history was taken from each of the patients regarding the socio-economic condition and general standards of living and hygiene. Clinical examination with documentation of the parasite inside the nasal cavity was done in all the cases. Further radiological investigation was not required in any

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Fig. 1 Leech after removal from a 40 years old female, presented with recurrent epistaxis

of the patient as all of them were diagnosed clinically. All the patients were treated in the OPD itself with removal of the foreign body (Fig. 1). While the first author documented the cases, the literature search and review and write up of the article was done by the second and third author.

Results

Among the six patients included in the series, two were females and the remaining four were males, with age ranging from 4 to 75 years. All the patients came with spontaneous epistaxis of varying degree and duration. Mean duration of epistaxis was found to be between 1 and 5 weeks. Apart from epistaxis, two patients complained of having foreign body sensation in nose. Peculiarly only one

patient complained of nasal obstruction and none had any pain in nose or surrounding areas.

In all the cases, the leeches were removed by artery forceps by holding the leech in mid part of its body and applying a sharp pull to remove it. Occasionally the parasite may get stuck inside the nasal cavity which makes removal difficult. In these patients application of saline water helps in removal as was done in one patient (Table 1). Immediate post operative epistaxis was not reported in any of the patient. All the leeches were between 5 and 10 cm in length. Advice regarding life style modification, drinking water habit changes and how to prevent further leech infestation were given to all the patients. Post operative period was uneventful in all the patients and there was no episode of epistaxis in the follow up period.

Discussion

Intranasal or nasopharyngeal foreign bodies are a common cause of epistaxis [1, 2]. Living parasite (leech) as foreign body is a very rare entity in Western countries [2]. Though animate and inanimate nasal foreign bodies often present with unilateral epistaxis specially in children [3]; reported cases of nasal leech causing uni or bilateral persistent epistaxis are very few and almost exclusively from the Indian Subcontinent (vide Table 2). Though, leeches, such as the *Hirudo medicinalis*, have been historically used in medicine to remove blood from the patients [4] for treatment of various conditions like hypertension but parasitic infestation by leech causing epistaxis is a potentially dangerous condition needing immediate attention. Leech is a segmental [5], aquatic worm living in fresh water, especially in tropical areas [6]. It belongs to the phylum

Table 1 Details of the patients included in the present series

Sl. no.	Age/sex	Complain	History	Duration	Examination	Management
1.	10 years/M	Epistaxis, unilateral (Lt), recurrent	Drinking spring water	6 weeks	Leech in Lt. nasal cavity below middle turbinate	Removed, OPD procedure
2.	40 years/F	Epistaxis, bilateral, recurrent	Drinking spring water	4–5 weeks	Leech in Rt. nasal cavity at the level of inf. turbinate, placed posteriorly near choana	Removed, OPD Procedure
3.	4 years/M	Foreign body Rt. nostril; epistaxis	Playing by side of a spring	Few hours	Leech in Rt. nostril occupying almost entire nasal cavity	Removed, minor OT procedure, under sedation
4.	75 years/M	Recurrent epistaxis, alternate nostril, Nasal obstruction	HTN, Often drinks water directly from spring	8 weeks	Leech in Lt. nostril, part of it under middle turbinate.	Removed, minor OT procedure
5.	60 years/F	Recurrent unilateral (Rt) epistaxis	Drinking spring water	4 weeks	Leech in Rt. nostril, below middle turbinate	Removed, OPD procedure
6.	8 years/M	Foreign body Lt. nostril; epistaxis	Nothing suggestive	2–3 days	Leech in Lt. nostril	Removed, OPD procedure

Table 2 Previously reported cases of nasal leeches

Author	Place	Year	No. of cases	Presenting feature	Related History	Examination finding	Management
Sarathi [1]	Dharan, Nepal	2011	1 case	7 year/F, h/o nasal stuffiness, unilateral epistaxis		Anterior rhinoscopy- leech in left nostril	Saline water irrigation + pulled out with forceps
Waleem and Ullah [14]	Muzaffarabad, Pakistan	2010	38 cases (3 years)	Unilateral epistaxis	Unsafe drinking water habits	Nasal leech	Pulled out with forceps
Chen et al. [10]	Taiwan	2010	6 cases (1984–2008)	Epistaxis	Unsafe drinking water habits	Nasal leech	Pulled out with forceps
Ghimire and Acharya [11]	Dharan, Nepal	2008	2 cases	Recurrent unilateral epistaxis		Nasal leech	Pulled out with forceps
Raza et al. [9]	Lahore, Pakistan	2006	14 cases	Epistaxis (12 cases, 83.4 %)	Unsafe drinking water habits	Nasal leech	Pulled out with forceps
Siddiqui et al. [15]	Abbottabad, Pakistan	2005	1 case	Severe anemia		Nasal leech	Blood transfusion
Chow et al. [13]	Hong Kong	2005	1 case	55 year/F, unilateral epistaxis, nasal obstruction	Swimming in fresh water	Nasal endoscopy- leech in Lt. middle meatus, half inside the maxillary antrum	Endoscopic removal with forceps under local anaesthesia
Satyawati et al. [3]	Chandigarh, India	2002	1 case	4 year old male with bilateral epistaxis		Multiple leeches in both nostrils	Pulled out
Bilgen et al. [16]	Bornova-Izmir, Turkey	2002	1 case	Nasal obstruction, intermittent epistaxis		Nasal endoscopy- leech in nasopharynx	Endoscopic removal
Golz et al. [2]	Haifa	1989	17 cases	Epistaxis		Nasal leech	Pulled out with forceps

Annelida and comprises the subclass Hirudinae [5]. The majority of leeches live in freshwater environment, while some species can be found in terrestrial [7] and marine environment, as well. It may be found exceptionally in the upper aero digestive tract after consumption of spring water or water from natural wells, after swimming in still waters like lakes and dams [6]. In the hilly areas, where poor villagers have the habit of drinking water directly from the falls or springs by means of palms of both hands cupped together, leech enters one's nostril very easily and stays within nasal cavity by virtue of its sticking and blood sucking property. In the present series this was probably the mode of infestation in all the cases who were resident of the hilly areas of Darjeeling district of West Bengal, India. Leeches use their anterior suckers to connect to hosts for feeding; and also releases an anaesthetic to prevent the hosts from feeling them. Once attached, leeches use a

combination of mucus and suction to stay attached and secrete an anticoagulant enzyme, "Hirudin", into the hosts' blood streams. Due to the hirudin secreted, bites may bleed more than a normal wound, even after leech is removed. As reported in literatures, leech infestation is common with unsafe water drinking habits [8] and the upper aerodigestive tract is commonly affected. Nose is the most common site of infestation (71 %), with epistaxis being the most prominent symptom. Other sites include—hypopharynx (14 %), nasopharynx (7 %), and oropharynx (7 %) [8]. Usually leech enters in one nasal cavity, but there are reports of infestation of both the nasal cavities with multiple leeches [3, 9]. Hence, it is recommended that a clinician should always suspect leech infestation for recurrent nasal bleeding in Tropics and it is always important to examine both the nasal cavities [9, 10]. The usual time period (delay) between leech infestation and onset of

symptoms varies from 2 to 15 days [6] and the common symptoms are recurrent epistaxis, blood spitting, odynophagia, dysphagia, dyspnoea and at times hemoptysis, depending upon the various sites of infestation [11]. The endoparasitism usually persists for a long time before actual intervention by a clinician, because of the inconspicuous site of infestation and the absence of pain [12]. The length of the leeches removed from the nasal cavities is reported to be 2–12 cm. [9]. Children and old aged peoples are commonly affected by leech infestation, while data does not show the male- female percentage [3, 9]. Patients with lower socio-economic status or those living in the rural areas having a history of drinking water from or bathing in, stagnant ponds, puddles, springs, natural wells, lakes or dams [1, 6] are commonly affected. Similar history was obtained from the present series also.

Clinical examination reveals a fleshy greenish- brown mobile mass in affected nostril or protruding from different nasopharyngeal and oropharyngeal areas; which is identified as blood engorged leech [1, 11]. Sometimes a part of its body may go inside the maxillary antrum and a part remains at the middle meatus. Nasal endoscopy may be helpful in those cases [12]. Removal of the leech is essentially uncomplicated—applying a forceps to the middle of the leech's body and a quick pull is all that is required to take it out of the nasal cavity (1, 3, and 11). Removal may be difficult in old dead leech with rhinolith formation or where the parasite lodges inside the maxillary antrum. Bleeding ceases immediately [11] after removal. Sometimes irrigation with saline water is needed for removal [1].

Conclusion

Though a rarity, still a case of recurrent nasal bleeding in Tropics should alert the otolaryngologist to the possibility of nasal leech infestation. Characteristic habit of drinking water or swimming or bathing may give a clue. Removal is very simple, often done as an OPD procedure without any significant post operative haemorrhage. Counseling regarding change of habit or life style change and advice regarding proper hygiene and sanitation goes a long way in preventing any recurrence. Apparently this is a simple disease which may present difficult challenge to the

attending otolaryngologist. The trick lies in being vigilant—so that prompt diagnosis and swift mitigation of the problem can be done. This article is a humble attempt to familiarize the otolaryngologists of the Indian Subcontinent to this unique condition.

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