Aquatic leech as a rare cause of respiratory distress and hemoptysis

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Introduction

Infestation into the respiratory tract by a leech is an emergency because it may cause hypoxia and death secondary to airway obstruction[1].

Case report

A 73-year-old male farmer was referred to our hospital with complaints of hemoptysis, dysphagia, dyspnea, and recurrent hoarseness and suffocation sensation for the past three weeks. In physical examination he had respiratory distress with hoarseness and stridor. Plain chest and larynx x-rays were normal. In transnasal fiberoptic bronchoscopy (FOB), we found a dark brown leaf-like material in supraglottis (figure 1). After stimulation and tapping with FOB, the foreign body changed its shape and became similar to a worm (figure 2). The diagnosis of leech infestation was made. Vocal cords were normal and the leech was attached to arytenoids. Because of the risks of bleeding, suffocation, and arytenoid dislocation, we stopped the FOB. The infestation was considered in patients presenting with hemoptysis, hoarseness and respiratory distress and a history of recent contact with fresh water streams.

Discussion

Leeches are blood-sucking hermaphroditic egg-laying parasites belonging to the phylum annelida, class Hirudinea. Blood sucking is possible due to the 3 radially formed jaws (forming incision)[2]. They are divided into two classes: land leeches which can penetrate the skin, and aquatic leeches, which invade upper aerodigestive tract[3]. Aquatic leeches live only in fresh water. They can enter accidentally the human aerodigestive tract by drinking unfiltered water. After entering the mouth or nostrils, they can pass to the nasopharynx, esophagus, epiglottis, and even trachea and bronchi[4]. There are reports of attack of leeches to conjunctiva[4], the vulva, vagina[5], bladder[6], urethra[7], and rectum[8] during swimming in infested water.

However, also medicinal leeches applied for flap survival in the head and neck reconstruction surgery may migrate to the upper aerodigestive tract. Saliva of leeches contains anticoagulant factors such as hirudin, which inhibits thrombin and factor IXa, and hememterin (plasminogen activator). They vary in color and the length ranges from a few millimeters to half a meter; they are leaf-like in shape (figure 1A), or cylindrical (figure 1B) depending on the contraction of their bodies.

Depending on the site of attachment, symptoms may vary, but usually signs of blood loss can be seen, such as hemoptysis, epistaxis, melena, and sometimes severe anemia. Signs of mechanical obstruction such as dysphagia, dysphonia, or dyspnea may develop rapidly because, after attaching to the mucous
membrane, they can ingest blood averaging 890% of their weight and increase very much in volume. Pandey reported the case of a 48-year-old man who presented with cyanosis and respiratory distress only 3 hours after drinking river water. In a report by Labadi, two cases of a live leech in the larynx showed dysphagia, cough, severe attacks of inspiratory stridor, cyanosis, and hemoptysis for five days to two weeks.

Removal of the leech requires special care and the utmost gentleness. Leeches have soft and slippery body surface, which ruptures easily, it is difficult to hold and remove a leech with force. It strongly attaches to the mucosa, with either triple-jawed mouth (e.g., medical leech: Hirudo medicinalis), or by insertion of a proboscis (e.g., Theromyzon tessulatum).

Removal of the leech should be performed with great caution to prevent prolonged bleedings because its saliva contains anticoagulant factors such as hirudin, which inhibits thrombin and factor IXa, and hemeterin (plasminogen activator). In addition, in hypopharyngeal or laryngeal infestations mucosal edema should be avoided, followed by possible dyspnea. In addition in our case traction may lead to arthenoid dislocation. Detachment of the leech can be performed under general or topical/local anesthesia by direct laryngoscopy. It can be achieved by applying 30% cocaine, 1:10000 adrenalin, or dimethyl phthalate. We used lidocain to paralyze the leech. Another method used for removal of leeches is irrigation with strong saline because they may induce the leech to vomit into the bitten tissue before detachment and cause contamination with enteral organisms. Serious aeromonad wound infections and sepsis have been reported following the medicinal use of leeches.

**Conclusion**

The possibility of endoparasitism by leech should be considered in patients presenting with hemoptysis, hoarseness and respiratory distress and a history of recent contact with fresh water lakes or streams especially during the leech season (from May to September). The removal of the leech should be performed with great caution to prevent prolonged bleedings or mucosal edema.

**References**