Aquatic leech as a rare cause of respiratory distress and hemoptysis

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REZUMAT

Lipitoare de apă - cauză rară de detresă respiratorie şi hemoptizie

Articolul prezintă cazul unui bărbat de 73 de ani cu hemoptizii recurente de trei săptămâni, disfagie, dispnee, stridor şi senzaţie de sufocare. Prin examinarea fibro-bronhoscopică a fost identificată drept cauză o lipitoare de apă fixată în glotă. Aceasta a fost îndepărtată după ce a fost injectată cu 4 ml lidocainã 2%. Infestarea cu lipitori în tractul respirator poate deveni letală, din cauza hipoxiei secundare obstrucţiei aeriene. O suspiciune înaltă de infestare cu lipitori poate fi ridicată la pacienţi cu hemoptizie, răguşeală, detresă respiratorie şi istoric de contact recent cu ape curgătoare.

Cuvinte-cheie: *detresă respiratorie, infestare cu lipitori, bronhoscopie*

ABSTRACT

This paper presents a 73 years old male with three weeks history of intermittent hemoptysis, dysphagia, dyspnea, stridor, and suffocations sensation. By means of fibrotic bronchoscopic examination, the cause was found to be a leech in the glottis. It was removed by injection of 4 ml lidocaine 2%. Infestation into the respiratory tract by a leech may become lethal because of hypoxia and death secondary to airway obstruction. A high index of suspicion of leech infestation sould be considered in patients presenting with hemoptysis, hoarseness and respiratory distress and a history of recent contact with fresh water streams.

Keywords: *respiratory distress, aquatic leech infestation, bronchoscopy*

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, dyspnea, dysphagia, 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 supraglotis (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 arythenoids. Because of the risks of bleeding, suffocation, and arythenoid dislocation, we stopped the FOB. The patient was transferred to the operation room. Under general anesthesia, 4 ml of lidocaine 2% was injected into the body of the leech. After 5 minutes it became flaccid and could be easily removed. After the procedure, the patient experienced relief from breathlessness and started speaking normally. After removing the leech, the patient remembered that he had ingested spring water three weeks earlier, 3 days later he started to present recurrent episodes of hemoptysis, vomiting and hoarseness and respiratory distress. The patient had an uneventful postoperative period and was discharged a day later.

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]. Aqautic 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[3].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 aero-digestive tract. Saliva of leeches contains anticoagulant factors such as hirudin, which inhibits thrombin and factor IXa, and hementerin (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

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Figure 1. A. Leech in supraglotis with near complete obstruction, B. Leech after stimulation became similar to a worm

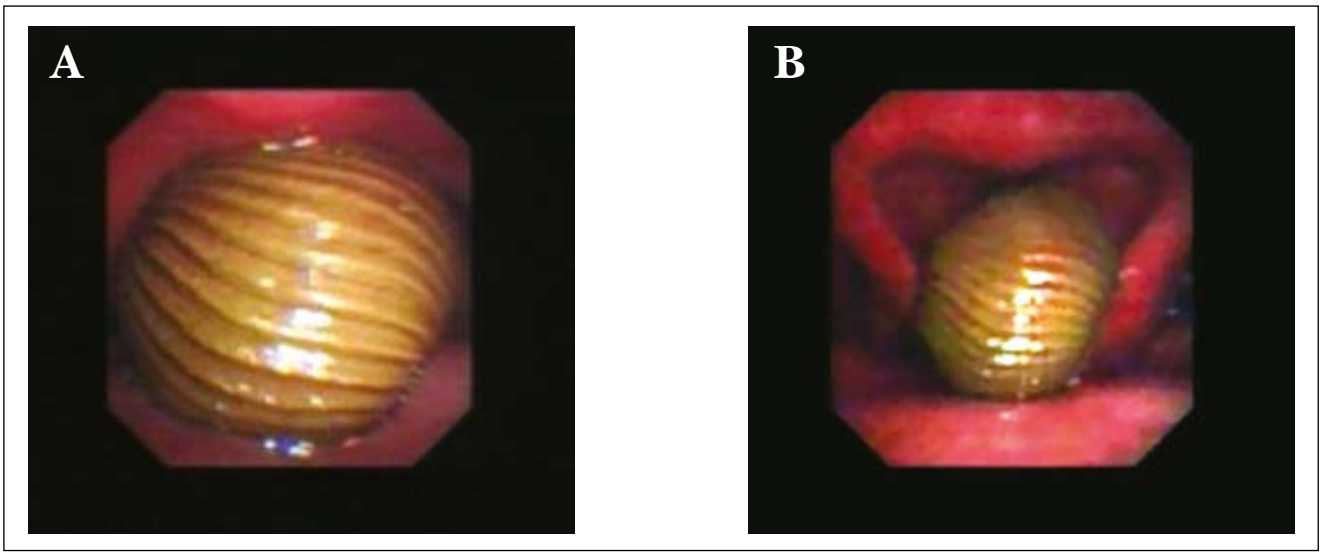

Figure 2. The leech after removal

membrane, they can ingest blood averaging 890% of their weight[9] and increase very much in volume. Pandey[10] 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[2], 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[10]. It strongly attaches to the mucosa, with either triple-jawed mouth (eg, medical leech: *Hirudo medicinalis*), or by insertion of a proboscis (eg, *Theromyzon tessulatum*)[11].

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 hementerin (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 arythenoid 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 phtalate[1]. We used lidocain to paralyze the leech. Another method used for removal of leeches is irrigation with strong saline[12], alcohol, vinegar, or turpentine. However, noxious agents should be avoided because they may induce the leech to vomit into the biten tissue before detachment and cause contamination with enteral organisms[1]. Serious aeromonad wound infections and sepsis have been reported following the medicinal use of leeches[13].

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.

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