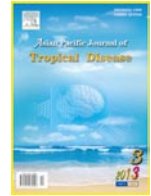




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Internal hirudiniasis in a hen (*Gallus gallusdomesticus*)—The first report in literature

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PEER REVIEW

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Comments

This case is the first report of *L. nilotica* caused internal hirudiniasis on hen. This finding is informative, expanding the knowledge of the relationship between parasite and hen. (Details on Page 233)

ABSTRACT

The leech is a blood sucking worm belonging to the class Hirudinea of the phylum Annelida. Leeches are commonly found in the waterland of temperate and tropical countries. Hirudiniasis, a rare condition with unusual symptoms, is caused by accidental introduction of leeches through natural orifices. In August 2011, a 1-year-old hen (*Gallus gallusdomesticus*) referred to private veterinary clinic in Iran with symptoms of severe respiratory distress, restless and inappetite. According to owner statement, the hen had a history of using spring water. After physical examination, black object was found attached to the internal mucous membrane of floor of mouth. The diagnosis was leech infection. The leech was removed by forceps without administration of drugs and detection, the hirudiniasis was caused by immature larvae of *Limnatis nilotica* (*L. nilotica*). According to author's knowledge, there is no report of Hirudiniasis in birds and the present case is the first report of internal hirudiniasis due to *L. niloticain* hen in literature.

KEYWORDS

Limnatis nilotica, Hen, Respiratory distress, Iran

1. Introduction

Leeches are invertebrates of phylum Annelida and class Hirudinea. A leech is usually about 12.5–15.25 mm long^[1]. Leeches that can cause infection of human are aquatic or terricolous. Land or terrestrial leeches, including *Haemadipsa zylanic*, *Haemadipsa sylvestris*, *Hamadipsa picta*, commonly live in tropical rain forests, where they may be found on stones, shrubs and leaves^[2–5]. Aquatic

leeches have a worldwide distribution, they live exclusively in fresh water, infesting people in muddy-bottomed rivers or ponds^[3]. Aquatic leeches contain *Limnatis nilotica* (*L. nilotica*), *Myxobdella africana*, *Dinobdella ferox*, *Phytobdella catenifera* and *Teromyzon tessulatom*^[4,5].

Leeches can attach to the external surface of a host, it is called external hirudiniasis. Some leeches attach to an internal surface of a host when the hosts drink contaminated water and they infest the upper digestive or

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respiratory tract. This is called internal hirudiniasis^[2,3]. As an internal leech, *L. nilotica* is commonly found in Southern Europe, North Africa, and the Middle East including Iran^[6]. It attaches to the mucous membranes such as membranes of conjunctiva, nose, larynx, pharynx, esophagus, urethra, vagina and anus. Patients infested with *L. nilotica* often present symptoms such as epistaxis, haemoptysis, haematemesis, anemia, chest pain, coughing, difficulty swallowing, respiratory distress and fever^[2,3,7,8]. The *L. nilotica* in regions like Ilam Province of Iran is a major cause of pollution of mammals such as cattle, sheep, goat, donkey and herd dog^[9].

According to author's knowledge, there is no report of Hirudiniasis in birds and the present case is the first report of internal hirudiniasis on *Gallus gallusdomesticus* hen due to *L. nilotica* in literature.

2. Case report

In August 2011, a 1-year-old hen (*Gallus gallusdomesticus*) referred to private veterinary clinic in the Dehloran suburbs in Iran with symptoms of severe respiratory distress, restless and inappetite. After physical examination, black object was found attached to the internal mucous membrane of floor of mouth (Figure 1). The diagnosis was leech infection. The leech was removed by forceps carefully without drug administration. The dark-green color surface with rows of green spots on the dorsal surface, and two yellowish-orange and dark-green bands on either side, with a 12 mm length were the main signs for detection of immature larvae of *L. nilotica* species. According to owner statement, the hen had a history of using spring water.



Figure 1. *L. nilotica* was found attached to the floor of mouth.

3. Discussion

Hirudiniasis, a rare condition with unusual symptoms, is caused by accidental introduction of leeches through natural orifices. Leech is an invertebrate having a tendency to enter the body through natural orifices^[10–12]. In human

beings, leech bite to various sites (*e.g.* nose, pharynx, larynx, esophagus, rectum and bladder) has been reported sporadically in the literature^[7,8,13]. Land leeches have powerful jaws and attach to skin; however aquatic leeches like *L. nilotica* have weak jaws and can only attach to soft tissues^[14]. Hirudiniasis is not common in animals and humans. The first report of infestation in sheep of *L. nilotica* in Iran was reported by Bahmani *et al.* in which leeches attached on the esophagus and normocyticnormochromic anemia was existed^[6]. Mehrzadi *et al.* reported an infestation of *L. nilotica* in herd dog in Shahrekord Province in Iran and this case showed 3% anemia and local acute infestation^[15]. Clinical report of rare case of stillbirths due to leech infestation in goat was reported by Gharedaghi *et al.*^[16]. Moghaddar *et al.* reported fatal hirudiniasis in a cow due to *L. nilotica*. The case had history of acute respiratory distress and continuous profuse bleeding from both nostrils. After removing the leeches from the nostrils and maintaining supportive treatment, the animal died after a few hours^[17]. Bahmani *et al.* reported respiratory distress in a pregnant cow by *L. nilotica* in Ilam Province in Iran^[18]. Some reports from Ilam Province in Iran have shown *L. nilotica* in sheep, cattle, dog and donkey, with manifestation of respiratory disorders and anemia, these conditions were in agreement with present case^[15]. This case is the first report of hirudiniasis in poultry in literature.

In this present case, the history of consumption of spring water was exited. The main inhabitations of leeches are ponds, lakes and streams^[10]. After the intake of contaminated water, the leech is localized in the upper respiratory system or digestive system, thus cleaning of polluted water can be the main solution to interrupt the transmission cycle of leech to animals^[18].

Conflict of interest statement

We declare that we have no conflict of interest.

Acknowledgements

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Comments

Background

Internal hirudiniasis, mostly caused by *L. nilotica*, has been reported in many middle western countries. The professionals should creat awarness on the aquatic leeches infestation in these areas.

Related reports

There is no related report on he previously.

Peer review

This case is the first report of *L. nilotica* caused hirudiniasis on hen. This finding is informative, expanding the knowledge of the relationship between parasite and hen.

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