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Internal contamination with leech in a turkey

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PEER REVIEW

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Comments

This is a good study in which the authors described the leech infection in turkey. This is the first report of turkey's infestation and the second report of bird infestation with *L. nilotica* in the world.

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ABSTRACT

Leech enters to mouth and nose through water. Nose and nasopharynx mucosa are the most preferred places for leech attachment with epistaxis and respiratory distress symptoms. But the leeches may rarely stick deeper to trachea or esophagus which could cause hematemesis, hemoptysis and severe respiratory distress. Leech infestation can cause gastrointestinal, respiratory and genital bleeding in rare cases. Various animals such as ruminants, single-toed and carnivores, are easily infected with leeches. In May 2014, a 2-year-old turkey infected with leeches through the contaminated drinking water was referred to a veterinarian with respiratory distress symptoms, anxiety, bleeding from the mouth in Maze–Abdali Village located at 17 km from Dehloran City of Ilam Province in the west of Iran. After physical observations, a moving dark green particle was seen. *Limnatis nilotica* were detected after separation from the oral cavity of turkey. Respiratory distress and oral cavity bleeding should be regarded in the areas where spring and flooded water were infested with leeches. Untreated and contaminated waters consumption should be prohibited.

KEYWORDS

Turkey, Leeches, *Limnatis nilotica*, Respiratory distress, Oral cavity bleeding, Iran

1. Introduction

Leeches are segmented worms of phylum Annelida. Leeches are aquatic worms that are capable of great expansion and contraction. Leech has 3 jaws with 100 teeth in each jaw and approximately 300 ultrafine teeth. So far, 650 types of leeches were known including blood-sucking, carnivores and toxic types^[1,2]. Aquatic leeches live in flowing waters with weaker jaws than earthworms. For this reason, they cannot bite and cut the skin and are incapable to attack the mucosal areas for feeding and blood-sucking

that cause anemia. Leech infestation occurs through contaminated water^[3–10].

Leech infestation is a rare cause of gastrointestinal, respiratory and genital bleedings. Leech saliva contains potent anticoagulant such as hirudin which inhibits thrombin and can impair blood coagulation. Usually, leech enters to mouth and nose through water. Nose and nasopharynx mucosa are the most preferred sites for leech attachment with epistaxis and respiratory distress symptoms. But the leeches may rarely stick deeper to trachea or esophagus which could cause hematemesis,

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hemoptysis and severe respiratory distress^[11].

Aquatic leeches, particularly *Limnatis nilotica* (*L. nilotica*), may enter the body through drinking water. Some may enter the excretory openings of persons who bathe with infested water. *L. nilotica*, which inhabits lakes and streams of Southern Europe, North Africa, and the Middle East, attains length of up to 12 cm or 4.75 inches, but smaller and younger specimens are the most likely to enter the body^[12].

Research studies showed the transmission potential of bacterial, viral and parasitic diseases of leeches. Fatal diseases such as AIDS, hepatitis B, toxoplasmosis and syphilis are transmitted by leeches^[13–15]. Variety of animals such as ruminants, single-toes and carnivores are infected with leeches^[16].

According to the author's knowledge, there was a report of hirudiniasis in birds showed a chicken infected with leeches from Iran. So the present case is the first report of leech infestation on turkey and the second report on birds.

2. Case report

In May 2014, a 2-year-old turkey infected with leech through the contaminated drinking water was referred to a veterinarian with respiratory distress symptoms, anxiety, bleeding from the mouth in Mazabdolahy Village located at 17 km from Dehloran City of Ilam Province in the west of Iran (Figure 1A). After physical observations, 1.6 cm moving dark green particles with orange lines in both sides can be seen. *L. nilotica* were detected after separation from the oral cavity of turkey (Figure 1B).



Figure 1. A: 2-year-old turkey; B: *L. nilotica* separated from interior side of turkey's beak.

3. Discussion

L. nilotica infestation is a zoonotic parasitic disease^[17]. Humans are usually infected with a horrific *L. nilotica*^[18,19]. Leech biting is painless^[20]. Due to the aggressive nature, leech attacks to various parts of mucosa such as nose, larynx, behind uvula, under vocal cord, posterior vaginal fornix, vaginal wall, uterine cavity, nasopharynx, nostrils, male urethra and eyes. This information has been reported from different parts of Iraq, Ethiopia, India, Turkey and Oman^[21–30].

First sheep infestation with *L. nilotica* was reported from Iran. There were 6–7 leeches in the oral cavity in each 10 infected sheep in Kurdish race^[31]. Another report about lambs and kids oral cavities infestation in Iran was because of the consumption of contaminated spring water^[32].

There was a report of mouth infection of a pregnant native

cow with *L. nilotica* from Ilam (west province of Iran) with symptoms such as respiratory distress, anorexia, anxiety and hematological changes^[33].

Bahmani *et al.* reported an oral infection of a native dog with two *L. nilotica* in Shahrekord (south-west of Iran)^[34]. Anemia with 34% hematocrit, hemoglobin decreasing, localized infection with fibrinolytic degradation, respiratory distress and fear was evident in the dog^[34]. A report of oral contamination in a 3-year-old donkey was also reported from Dehloran^[35].

The first report of bird infestation with leeches in the world has been reported from Iran. Bahmani *et al.* has reported the infection with *L. nilotica* in the oral cavity of a native chicken^[36]. In this study, the infection of a turkey with leech was observed after drinking the contaminated spring water. This report is the first report of turkey's infection and the second report of bird infestation with *L. nilotica* in the world.

Leeches contamination is a common parasitic infection in humans and animals, especially after the consumption of contaminated water, so the prevention of contamination with leeches and the symptoms of infection (anemia, respiratory distress, tachycardia, anxiety, anorexia, *etc.*) should be proceeded and the use of untreated and infected water should be prohibited.

Most rural population and livestock consume spring and flowing water, so it is recommended that probable water contamination with leeches should be informed for the prevention of leech infestation and the complications.

Conflict of interest statement

We declare that we have no conflict of interest.

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Comments

Background

Leech enters to mouth and nose through water. Nose and nasopharynx mucosa are the most preferred places for leech attachment with epistaxis and respiratory distress symptoms, but it may rarely stick deeper to trachea or esophagus, causing hematemesis, hemoptysis and severe respiratory distress. Leech infestation can cause gastrointestinal, respiratory and genital bleeding in rare cases. Various animals such as ruminants, single-toed and carnivores are easily infected with leeches.

Research frontiers

According to author's knowledge, there was a report of hirudiniasis in birds showed a chicken infected with leeches from Iran, so the present case was the first report of infestation with leech on turkey and the second report infestation on birds.

Related reports

Bahmani *et al.* reported an oral infestation of a native dog with two *L. nilotica* in Shahrekord (south-west of Iran).

Anemia with 34% hematocrit, hemoglobin decreasing, localized infection with fibrinolytic degradation, respiratory distress and fear was evident in dog. A report of oral contamination in a 3-year-old donkey was also available from Dehloran. First reports of bird infestation in the world with leeches has been reported from Iran. Bahmani *et al.* has reported the infection of the oral cavity in a native chickens with *L. nilotica*. In this study, the infection of a turkey with leech was observed after drinking contaminated spring water.

Innovations & breakthroughs

This paper is the first report of turkey's infestation and and the second report of bird infestation with *L. nilotica* in the world.

Applications

Most rural populations and livestock consume spring and flowing water, so it is recommended that probably waters contamination with leeches should informed for the prevention of leech infestation and the complications.

Peer review

This is a good study in which the authors described the leech infection in turkey. This is the first report of turkey's infestation and and the second report of bird infestation with *L. nilotica* in the world.

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