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Rare occurrence of leech infestation in ovary of a cow

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Abstract

The present study describes a foreign body that happens to be a leech lodged in the ovary of a cow from Assam, India. Briefly, during examination of ovaries collected from cattle at slaughter, one of the ovaries showed presence of a non-motile worm like dull and dark coloured thick and muscular foreign body. It measured 18 mm in length and 3 mm width at the broader posterior end. There was presence of annulations on the body surface, one small sucker at the narrower end and a large posterior sucker at the broader end. Microscopy of the lactophenol treated specimen could not reveal much due to its rigidity and contractile state. Identification of the specimen as leech was made on the basis of morphological findings. The small sized leech was presumed to be a terrestrial type (land leech) belonging to the genus *Haemadipsa*. It is suggested that the leech might have gained entry into the host through the vagina and thereby uterus to reach one of the ovaries. The present finding appears to be the first report of *Haemadipsa* sp. infesting a visceral compact organ in man and animals and adds ovary to the list of organs that are documented to be affected by leech.

Keywords: Terrestrial leech, *Haemadipsa*, cow, ovary, Assam

1. Introduction

Leeches, both aquatic and terrestrial are voracious blood suckers and can suck blood up to 10 times of their body weight [1]. Attack on man and animals while moving through the leech habitats and during drinking of water from leech infested ponds and streams is a common occurrence in the tropics and subtropics [2]. Leech bite is one of the important health problems to cause annoyance, discomfort, site specific complications, blood loss leading to severe anaemia and even death [3]. In man, leeches have been reported to affect any hollow organ system that has a natural portal of entry [4-7]. In animals, however, there are few reports on such infestation and found to be limited to the external body surface, respiratory passage and oral cavity [8, 9, 10] only. There seems to be no information on leech localization in any visceral compact organ of man and animals. The present study reports an unusual case of leech infestation in the ovary of a cow from Assam, India.

2. Materials and Methods

2.1 Study period and Study Area

This descriptive case study was performed while examining cow ovaries to isolate cumulus oocyte complex (COC) for an *in vitro* fertilization study. During the month of April 2016, about 200 ovaries were collected aseptically in normal saline solution from adult cows slaughtered at an abattoir nearby the College of Veterinary Science, Khanapara, Guwahati (Assam) for the above study.

2.2 Methodology

During examination by slicing technique, one of the ovaries showed presence of a grossly visible non-motile foreign body lodged in a pocket surrounded by ovarian tissue. The object was separated out with a fine forceps and kept in a petridish containing normal saline solution. Measurement, other morphological features of the object and visible abnormalities if any, present in the ovarian tissue were recorded. The specimen was put in lactophenol for a couple of days and examined thereafter under microscope for morphological study. Identification of the object was done in the light of available literature [11].

3. Results and Discussion

The affected ovary looked normal in size and appearance with no sign of internal haemorrhage but mild congestion in the tissues surrounding the object. The object was worm like long, non-motile, dull and dark coloured, thick and muscular in appearance. It was in a contracted state with its anterior end being slender and the posterior end thick and broad (Fig 1 a, b). The length of the object was 18 mm while the breadth at the broader posterior end was 3 mm. Lactophenol treated specimen revealed presence of an elastic membranous covering around it. Further examination after removal of external cover revealed presence of external annulations on the body surface, one small sucker at the narrower anterior end and a large sucker at broader posterior end (Fig 1 c, d). However, no other internal structure could be distinguished during microscopy of the rigid, contracted object. Based on these observations, the foreign body was found resembling a leech under genus *Haemadipsa* described elsewhere [12].

Leech bite on animals and man is a common occurrence in tropical and subtropical countries including Himalayan regions of South East Asia [13]. The present record of leech infestation in a cow agrees to the earlier reports [8, 14, 15] made on the common health problem due to leech bite in free ranging yaks, mithuns and other domestic animals of the North East India. Similar reports on human infestation are also available from the state of Assam and other parts of India [2, 16, 17]. Several aquatic leeches viz. *Limnatis nilotica*, *Dinobdella ferox*, *Myxobdella africana* have been reported from many cases of infestation in man and animals [2, 10, 18, 19, 20]. In the present case, identification of the specimen as leech was made on the basis of colour, appearance and presence of annulations and suckers. On the basis of measurement, the leech has been assigned to terrestrial leech species under the genus *Haemadipsa*. This agrees to the general perception that

the terrestrial leeches are smaller than the aquatic ones [13]. Moreover, 3 species of terrestrial leech of genus *Haemadipsa* have been recognized from the North East India [15] of which 2 species (*H. sylvestris* and *H. zeylenicus*) were found to be prevalent in Assam [21].

In humans, leech infestation recorded from different body parts are nasal passage [4]; larynx and trachea [22, 23], urethra and urinary bladder [7, 24], rectum [25], oral cavity [11]; external auditory canal [26]; eye [27]; vagina [17, 28] and peritoneal cavity [2, 29]. However, in domestic animals leech bite reports made so far are limited to the oral [9, 30] and respiratory passages [22, 31].

In the present case, the leech detected inside an ovary seems to be the only visceral compact organ reported for the first time. The leech might have gained entry to the ovary present in the abdominal cavity through vagina and uterine tract of the cow. This agrees to the human case reports of leech lodgement in the peritoneal cavity after gaining entry through the vagina and perforation of uterine wall [2, 19].

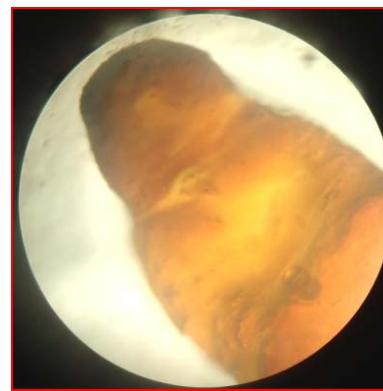
System or organ specific complications including varying degree of haemorrhage due to leech bite are on record in man and animals [4, 19, 22]. Leech lodging in the peritoneal cavity caused haemoperitoneum and inflamed uterus with perforation of its wall at the fundus region [2]. However, such changes were not observed in the present case in which the ovary rather looked normal in appearance and without having any deposition of fluid material surrounding the leech inside the pocket. Such condition might indicate the case a long standing one and this would have been remained undetected had the animal left alive. This justifies that cattle and other free grazing animals are at risk of exposure to leech bite in endemic areas due to their grazing behaviour and many such cases might remain undetected.



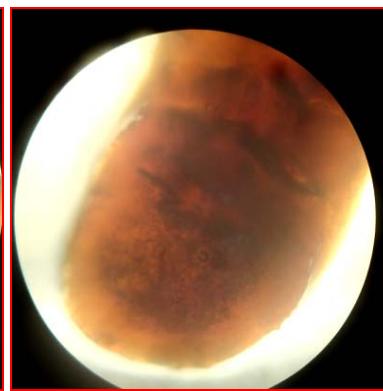
Fig.1 (a): Leech removed from the pocket in ovary



(b): Gross image of the whole leech



(c): Anterior end with oral sucker



(d): Sucker at posterior end (10X)

4. Conclusion

The present report appears to be the first record of *Haemadipsa* sp. infesting a visceral compact organ in animal and this adds ovary to the list of organs of man and animals that are affected by leech attack.

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