Nasal Oestrosis in a Jamunapari goat

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Abstract *Oestrus ovis* is a well-known parasite of the nasal cavities and adjoining sinuses in sheep and goats. A 3-year-old female Jamunapari goat was presented with a history of anorexia, weight loss, in-coordinated movements, nasal discharge since 10 days and two nasal bots expelled during sneezing 3 days back. Upon clinical examination the animal was dull, dysphonic, unsteady gait and having blocked nostrils with thick mucoid discharge along with an increased respiratory rate. Parasitological examination revealed it as an *O. ovis* (nasal bots). The occurrence of nasal bots in a goat and its successful therapeutic management and public health significance have been reported and discussed in the present communication.

Keywords *Oestrus ovis* · Nasal bot · Goat

Introduction

Nasal oestrosis is a worldwide myiasis caused by the larvae of the fly *Oestrus ovis* (Diptera, Oestridae), that develops from the first to the third stage in the nasal cavity. It is primarily a wide spread infestation of sheep and rarely occurs in goats, camel, deer, reindeer, elk and ibex (Lapage 1956; Das and Bhatia 1994). This is an obligate parasite of

the nasal cavities and paranasal sinuses of sheep and goats and the larvae elicit clinical signs of cavitary myiasis seen as a seromucous or purulent nasal discharge, frequent sneezing, incoordination and dyspnea. The migratory larvae may also penetrate and erode the dorsal turbinate bones, frontal sinuses and occasionally the skull bones thereby entering into the cerebral cavity, causing false gid (Taylor et al. 2007). Myiasis in an incidental host may have biological significance towards medical and public health importance if the incidental host is man. This infection can result in signs of generalized disease, causing serious economic losses in sheep and goat reared for meat and dairy production. The present communication describes the therapeutic management of Nasal Oestrosis in a Jamunapari goat.

Materials and method

A 3-years-old female Jamunapari goat was brought to polyclinic, IVRI Izatnagar with a history of anorexia, weight loss, in-coordinated movements and nasal discharge. On clinical examination the animal was dull, dysphonic, unsteady gait, blocked nostrils with thick mucoid discharge (Fig. 1) and an increase in respiratory rate. The owner of the animal had also brought the bots which were discharged on the previous days from the goat (Fig. 2). Frequent violent sneezing was observed which resulted in expelling of third larval instars (nasal bot) of *O. ovis* (Fig. 3).

Results and discussion

The animal was treated with single dose of ivermectin (Hitek[®], Virbac Animal Health India Pvt Ltd) @ 0.2 mg/kg

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Fig. 1 Jamunapari goat with thick mucoid discharge

Fig. 2 Nasal bots which were discharged on the previous days from the goat

Fig. 3 Freshly expelled of third larval instars (nasal bot) of *Oestrus Ovis*

body weight subcutaneously along with supportive vitamin therapy for 7 days. The animal recovered uneventfully by 2 weeks post-treatment without any complications. The live larvae recovered from the animal were subjected to parasitological examination and were grossly as well as microscopically examined for morphological characteristics (Soulsby 1982).

Parasitological examination revealed that the larvae had nine segments measuring 1.2–1.3 cm in length and had a dark transverse band on the dorsal surface of each segment. Anterior end was armed with minute paired hooks and the ventral surface was roughly flattened and ornamented with rows of small spines. Microscopic examination of Posterior spiracle showed characteristic 'D' shaped, closed, dark black coloured, deep seated stigmal plates with radially arranged respiratory holes (Fig. 4) which confirmed it as *O. ovis*.

Oestrus ovis can severely impairs the breathing because it induces tenacious nasal discharge to which grass, straw and dust can adhere, clogging the air passages. Moreover, the infection may be complicated by sinusal tumour and lung abscesses (Dorchies et al. 1993). Public health significance of nasal bots cannot be undermined as it is associated with human population, causing catarrhal conjunctivitis, corneal opacity, visual impairment (ophthalmomyiasis) and even stomatitis, when bots are deposited on the aberrant sites (Hall and Smith 1993).

Furthermore, shepherds are said to be especially susceptible to myiasis by *O. ovis* and it may cause serious trouble. Several cases of ophthalmic and naso-pharyngeal myiasis have been reported in humans, indicating a public health issue in certain areas (Dar et al. 1980; Masoodi and Hosseini 2003; D'Souza and Khatoon 2012). The ophthalmomyiasis produced in man by *O. ovis* larvae is restricted to conjunctivae, sclera, eyelids and lacrimal duct (external ophthalmomyiasis) or the eye ball (internal ophthalmomyiasis) (Dar et al. 1980; Stulting and Meyer 1981; Omar et al. 1988; Amr et al. 1993).

The presence of *O. ovis* infestation in goat may be attributed to several factors. Many sheep/goat breeders do not perform routine and regular antiparasitic treatment of their animals. Usually, farmers consider the treatment only after severe clinical signs manifest in the affected animals and since the early infections or re-infections do not present with marked naso-sinusal signs, treatment is not readily provided. The use of long acting anti-parasitic drugs or frequent de-worming of stocks and use of systemic insecticides such as avermectin in the fly active season can

Fig. 4 'D' shaped, closed, deep seated stigmal plates with radially arranged respiratory holes at the posterior end of the nasal bot

be successful in decreasing both the occurrence and intensity *O. ovis* infections in goats.

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