

# FIRST REPORT OF A NEMATODE *PHYSALOPTERA PREPUTIALIS* PARASITIZING A STRAY CAT (*FELIS CATUS*) FROM HISAR, HARYANA

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## SUMMARY

One adult female stray cat (*Felis catus*), examined in post mortem hall for any helminthic infection in gastro-intestinal tract revealed 14 pinkish nematodes having an average length of 1.5-5 cm in the stomach. Female worms were recognised by a thick brown cementing material at their vulvar region. Both the sexes were having prepuce like cuticular extension at their posterior end. Intestinal content examination revealed some oval shaped, thick shelled eggs containing well developed larvae. Based on the gross and microscopic characters, the worm was identified as *Physaloptera preputialis*. This is the first report of *P. preputialis* in a cat from Haryana.

**Keywords:** Haryana, *Physaloptera preputialis*, Stray cat, Stomach worm

Cat stomach worms of genera *Physaloptera* are parasitic nematodes of digestive tract of vertebrates except fish. In felines, *Physaloptera preputialis* and *P. rara* are the most commonly recorded species throughout the world (Tiekotter, 1981). In India, *P. preputialis* has been recorded in stray cats of New Delhi (Gill, 1972) and Mizoram (Borthakur and Mukharjee, 2011). There is a single report of coprological finding of ova from Royal Bengal tiger in Nandankanan zoological park of Odisha (Mahali *et al.*, 2010). More recently, there is a report of *P. preputialis* from an Indian leopard in Odisha (Hota *et al.*, 2018). Present report deals with the detection of adult stage as well as egg containing larvae of *P. preputialis* during necropsy examination of a stray cat of Hisar (Haryana).

Presence of gastrointestinal nematodes in wild animals is inevitable in Indian conditions. In the present study, one adult female stray cat (*Felis catus*) weighing around 5kg and severely injured by dog bite was presented to Teaching Veterinary Clinical Complex at Hisar Veterinary College for rescue purpose. The cat was unable to survive due to critical injuries. Dead cat was examined in post mortem hall for any helminthic infection in gastrointestinal tract. On necropsy examination, the stomach revealed partially digested food material and fourteen live, grossly visible, small to medium sized nematode parasite which are embedded into gastric mucosa. The mucosa was highly congested, thickened and oedematous (Fig. 2). The worms were first washed in phosphate buffered saline (PBS, pH 7.2) and subsequently transferred in 10% formalin. Faecal sample from intestine was also collected for further parasitological investigation. Later, few worms were cleared in lactophenol for detailed

study of morphological features.

Grossly, the nematodes recovered were light pinkish in colour and 1.5-5 cm in length (Fig. 1). In fertilized females, the vulva was covered by a conspicuous ring of brown cementing material (Fig. 3). Both the sexes were having prepuce like cuticular extension at their posterior end (Fig. 4). Microscopic examination after lactophenol clearing showed anterior region bear triangular lips with centrally placed teeth followed by a muscular pharynx (Fig. 4). Faecal sample collected and examined by floatation technique revealed some oval shaped, thick shelled eggs containing well developed larvae indicating the infection of *Physaloptera* species. Eggs were 41 to 50 µm long and 27 to 39 µm wide (Fig. 5). Sexual dimorphism demonstrated by the presence of brown coloured cementing ring around vulva in female is a unique character of *P. preputialis*. Based on the gross and microscopic characters, the worm was identified and confirmed as *P. preputialis*. This is the first report of *P. preputialis* in a cat from Haryana.

*Physaloptera praeputialis* was originally described by Linstow (1889) from a domestic cat in Brazil and since that time, it has been the most commonly reported species of *Physaloptera* from domestic cats. Cuticular sheath form prepuce like structure was similar to the finding presented by other workers (Hota *et al.*, 2018). Naem and coworkers (2006) also reported that gastric mucosa in congested and oedematous with multiple erosions in cats affected with *P. preputialis*. Intermediate hosts like crickets and beetles play a key role in life cycle of *P. preputialis*. Petri and Ameel (1950) proposed the requirement of arthropod in the life cycle of *P. praeputialis* with success in infecting

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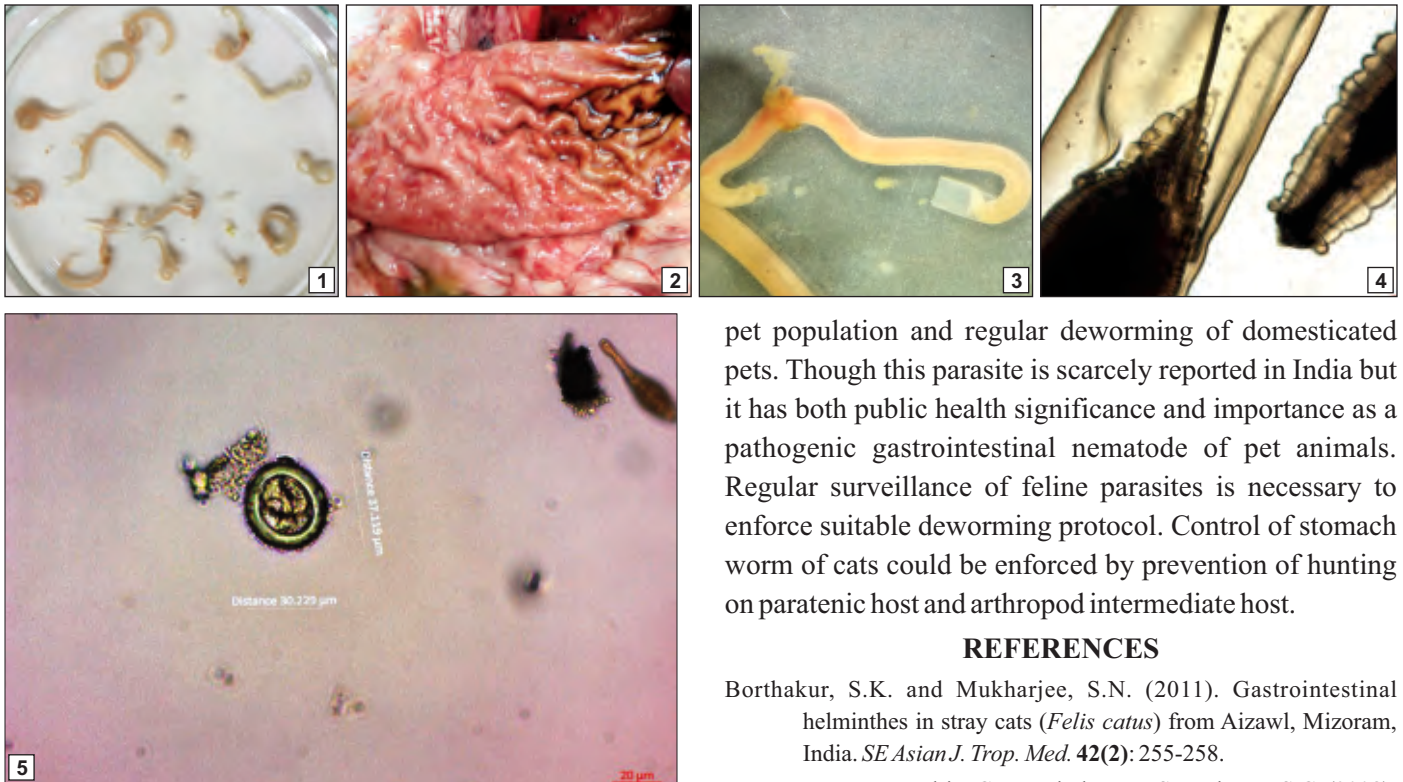


Fig. 1 - 5. (1) Adult *Physaloptera preputialis* recovered from stomach of cat; (2) Congested and oedematous gastric mucosa; (3) Adult *Physaloptera preputialis* under stereozoom microscope; (4) Anterior and posterior end of *Physaloptera preputialis* after clearing with lactophenol; (5) Egg of the *Physaloptera preputialis* under high power objective (400 X)

*Blatella germanica* (cockroach), *Gryllus animilis* (field cricket) and *Centophilus* species with cat faeces. Later, lizards (*Varanus griseus*) and the long-eared hedgehog (*Hemiechinus auritus*) were demonstrated as paratenic hosts for *P. preputialis* (Bowman *et al.*, 2008). However, there is no such arthropod involvement recorded in India due to comparatively low incidence rates. In India, there are scarce data on the parasitic infections in cats (Moudgil *et al.*, 2015).

Cat stomach worm, *P. praeputialis* has been reported throughout the globe, ranging from North America to South America; and from Southeast Asia to Australia. From Europe, the only report is from Greece. In African continent, the only report is from South Africa (Bowman *et al.*, 2008). It is often reported to be recovered in cat vomitus induced due to parasitic gastritis, but not possible to diagnose in Indian situation due to low feline

pet population and regular deworming of domesticated pets. Though this parasite is scarcely reported in India but it has both public health significance and importance as a pathogenic gastrointestinal nematode of pet animals. Regular surveillance of feline parasites is necessary to enforce suitable deworming protocol. Control of stomach worm of cats could be enforced by prevention of hunting on paratenic host and arthropod intermediate host.

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