

## *Trichuris hystricis*, a Whipworm from *Hystrix indica* in Iran

<sup>1</sup>M.R. Youssefi, <sup>2</sup>S.H. Hoseini, <sup>3</sup>M.T. Rahimi and <sup>4</sup>B. Esfandiari

<sup>1</sup>Department of Veterinary Parasitology, Islamic Azad University Babol-Branch, Iran

<sup>2</sup>Department of Veterinary Parasitology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

<sup>3</sup>Department of Medical Parasitology, Tehran University, Iran

<sup>4</sup>Pasteur Institute of Iran-Amol Research Center, Iran

**Abstract:** *Hystrix indica* is a large nocturnal, herbivorous, spiny, rodent, locally called Tashi, belonging to family 'Hystricidae'. Porcupines are easily recognized by their hair modified more or less completely into spines. They are extremely sharp and easily removed as they are a form of modified hair. *T. hystricis* is described from the cecum and large intestine of the rodent (*Hystrix indica*), collected in northern Iran. This is the first record of *Trichuris hystricis* parasite in this rodent of Asia.

**Key words:** *Hystrix indica* • Rodent • *Trichuris hystricis* • Iran

### INTRODUCTION

*Hystrix indica* is a large nocturnal, herbivorous, spiny, rodent, locally called Tashi, belonging to family 'Hystricidae'. Porcupines are easily recognized by their hair modified more or less completely into spines. Its neck and shoulders are crowned with a crest of bristles 15-30 cm long. The quills on the back are very profuse. Each quill is ornamented with deep brown or black and white rings [1]. They are extremely sharp and easily removed as they are a form of modified hair. The tail is covered with shorter spines that appear white in color. Its hair is highly modified to form multiple layers of spines. Beneath the longer, thinner spines lies a layer of shorter and thicker ones. Among these, are longer, hollow, cup shaped rattling quills that are used to alarm potential predators. To warn predators, the white, open-ended tail quills produce a rattling sound when shaken. The feet and hands are broad, with long claws that are used for burrowing [1].

*Trichuris* Roederer, 1761 (Nematoda: Trichuridae) shows a cosmopolitan distribution and comprises about 70 species that parasitize a broad spectrum of domestic and wild mammals ruminants, marsupials, rodents and primates, including human [2, 3]. Many species of *Trichuris* are morphologically well defined; however, others were differentiated only by their host species [4, 5]. Therefore, many of these whipworms probably are synonyms for example Yamaguti in her book notifying

to *T. hystricis* [6] Syn. *Trichocephalus hystricis* in *Hystrix hirsutirostris*; Russia and *T. hystricis* [7] in *Hystrix cristata*, Basel zoo is synonyms together [8]. In the present study, we describe the detection of *Trichuris hystricis* in a *Hystrix indica* in Iran, which is the first report of such infected *Hystrix indica* in Iran.

**Case Report:** A young female *Hystrix indica* 2-3 years was shot accidentally by villagers in Babolsar city, Mazandaran province. (Latitude 036n43 and longitude 052e39, North of Iran). Killed *Hystrix* transferred to the Department of Veterinary Parasitology of the Tehran University. We examined the digestive tract for endoparasites by screening (Mesh 70). The specimens were fixed and preserved in 70 % ethanol. They were cleared in lacto phenol and studied in temporary mounts. Confirming the identification, samples were sent for Veterinary Parasitology Museum, Tehran University. 17 nematode helminthes which were obtained identified as *Trichuris hystricis*. 5 Samples were male and 12 samples were female.

### Description of Male and Female

**Male:** Posterior part of body broad and handle-like Stichosome with 1 row of stichocytes and 1 pair of conspicuous cells at esophagus-intestinal junction. Male was 23.76 - 27.45 mm length and Spicule length was 1.87 - 1.98 mm, sheath Spicule length was 0.76 µm. Male with proximal cloacal tube J-shaped; spicular sheath with spines uniformly distributed from proximal to distal

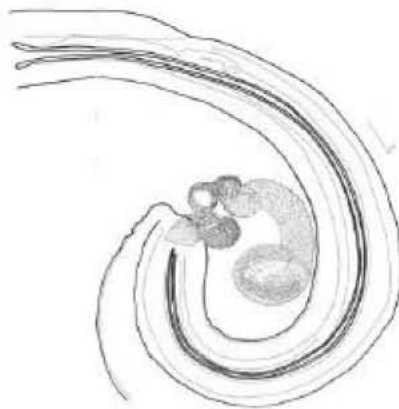


Fig. 1: Male of *Trichuris hystricis* in *Hystrix indica* (Drawing with Dr. Iraj mobedi)

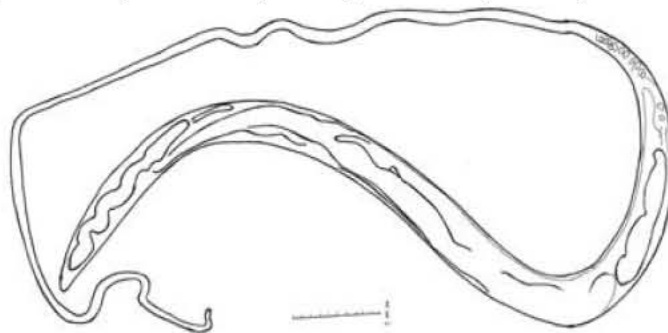


Fig. 2: Female of *Trichuris hystricis* in *Hystrix indica* (Drawing with Dr. Iraj mobedi)

portion. Length of spiny spicular sheath varies according to degree of evagination. Testis ends near final third of distal cloacal tube, showing different degree of convolutions. The bacillary band 0.06 – 0.09 mm long from anterior extremity of body. Bacillary glands reduced in number and only visible in anterior portion (Figure 1).

**Female:** Total length was 32.94 - 35.86 mm long, esophageal region 12.32 - 15.29 mm. Width esophageal region at tip 31 - 40  $\mu$ m and maximum width of esophageal 450 - 500  $\mu$ m. Vulva at level of esophagus-intestinal junction, anus subterminal in position at end of body (Figure 2).

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