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## Case Report

# First report of *Taenia acinonyxi* (Ortlopp, 1938) in *Acinonyx jubatus venaticus* from Iran

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## ABSTRACT

The Asian cheetah is known as Iranian panther. A four years old female cheetah was killed in a road accident by a truck in Abbas Abad (Biarjamand) County around Shahrood City in Semnan Province, central part of Iran. Two days after the accident the carcass of animal was autopsied and only five cestodes were obtained from its intestine. In inspection of other organs no other helminth was observed. Cestod samples were fixed and stained by carmine acid. Characterization of the cestodes using morphological standard key, identified the cestodes as *Taenia acinonyxi*.

**Keywords:** *Taenia acinonyxi*, *Acinonyx jubatus venaticu*, Cheetah, Iran

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## Introduction

Member of family taeniidae is the most important cestodes in term of their significance for human and animal health. Adult worm occupy the small intestine of carnivores and a variety of animals act as intermediate hosts. Many species of *Taenia* have been described from canine and feline in Iran (1-5). *Taenia acinonyxi* infects leopard (*Panthera pardus*) and cheetah (*Acinonyx jubatus venaticus*). The intermediate hosts are not definitely known, but cysticerci with rostellar hooks resembling those of the adults were found in the muscles of African herbivores (6, 7). Possible intermediaries are impala (*Aepyceros melampus*), sable antelope (*Hippotragus niger*), gerenuk (*Litocranius walleri*), gemsbok (*Oryx gazella*), grey duiker (*Sylvicapra grimmia*), African buffalo (*Syncerus caffer*), warthog (*Phacochoerus aethiopicus*) and other wild ruminants (7). The final hosts of this species usually are limited to leopards and cheetahs in sub-Saharan and sub-Saharan zones in Africa (8, 9). In this case study we aimed to evaluate the helminthes parasites of Cheetah in Iran.

## Case report

The Asian cheetah known as Iranian panther (scientific name: *Acinonyx jubatus venaticus*) is a rare endangered species which only a few of them are found in Iran. The main habitats of Asian cheetah are desert regions. Results of the latest research estimated that an average of 70 to 100 panthers exist in Khartooran of Shahrood, Naybandan of Tabas and Darre anjir of Bafgh in Iran. Zarand, Naeen and Jajarm are other parts of Iran in which this species may be found as well (10, 11).

A four years old female cheetah with a body-weight about 32 kg, was killed in a

road accident by a truck in Abbas Abad (Biarjamand), the county around of Shahrood City in Semnan Province (Latitude 36.083, longitude 58.967 and elevation 1238, East Semnan Province). Two days after the accident, the carcass of *Acinonyx jubatus venaticus* was autopsied and the internal organs were transferred to the laboratory of Department of Veterinary Parasitology at University of Tehran. The content of digestive tract including feces and mucus passed through a sieve (Mesh 70) to remove debris. The worms were then washed off the sieve and preserved in 70% ethanol. In this study just five cestodes were isolated from the small intestine and in inspection of other internal organs no helminth was found. For a definitive identification, mature and gravid segments of worms were stained by carmine acid method (12). Dissected rostellum was mounted in polyvinyl lactophenol and sufficient pressure applied to the coverslip to flatten the hook. The number, shape and arrangement of rostellar hook and morphological characteristics of the mature and gravid segments were studied.

The worms were white, thick bodied, and around 23-27 cm in length (Fig. 1). The rostellum well developed and armed with a double rows (35-40) of hooks of typical *Taenia* shape. The larger hooks were 211-230  $\mu\text{m}$  (mean 218  $\mu\text{m}$ ) and the smaller were 126-148  $\mu\text{m}$  (mean 132  $\mu\text{m}$ ) (Fig. 2). The length of large hooks of *T. acinonyxi* was higher than *T. hydatigena*, *T. multiceps* and *T. gaigeri* but was smaller than *T. taeniaeformis* and *T. endothoracicus* (Fig.3). Each of the mature segments had a single lateral genital pore that randomly occurred on either right side of the segment or the left side. The genital pore was posterior to the midpoint of the lateral margin. The aporal lobe of the ovary was usually larger than the

poral lobe and the vaginal sphincter was absent. Testes were in one horizontal layer, near the anterior margin of the segment and extending posterior to the level of the vitelline gland. The cirrus sac was club-shaped and reached the longitudinal osmoregulatory canals. The gravid segments had 7-10 uterus branches on each side (Fig. 4). Eggs could be easily recognized as those

of a *Taenia* through examination under a microscope, which revealed the typical brown-shelled taeniid eggs. Based on morphological characteristics along with diagnostic keys the cestodes were diagnosed as *Taenia acinonyxi* (6, 13, 14). This is the first report of *T. acinonyxi* of from *Acinonyx jubatus venaticus* from Iran.



Fig. 1: Whole *Taenia acinonyxi* (unstained) obtained from intestine of Asian cheetah

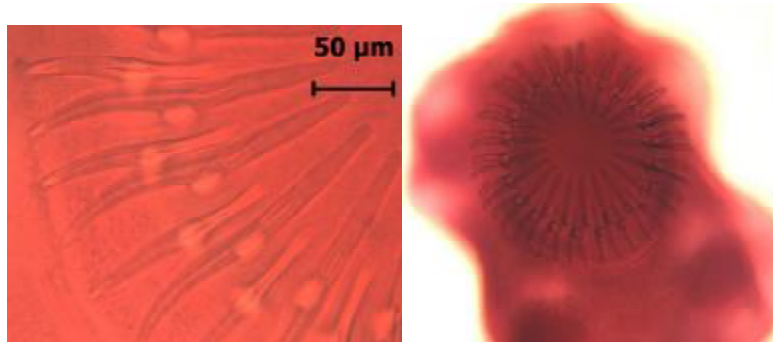


Fig.2: Scolex of *T. acinonyxi* with two rows of hooks

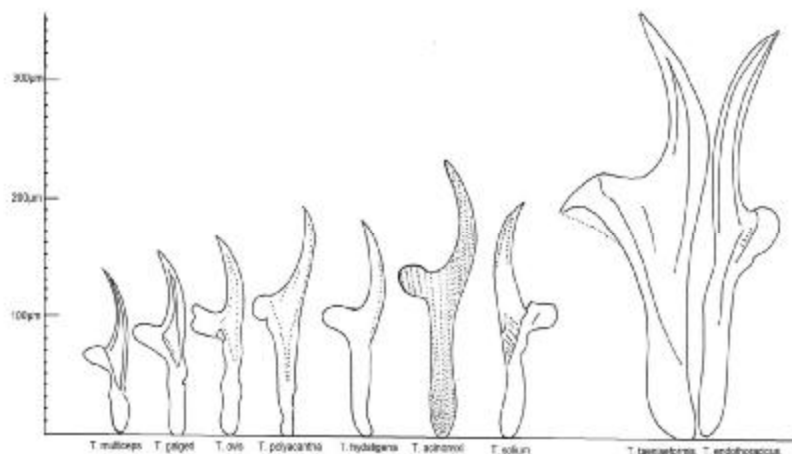
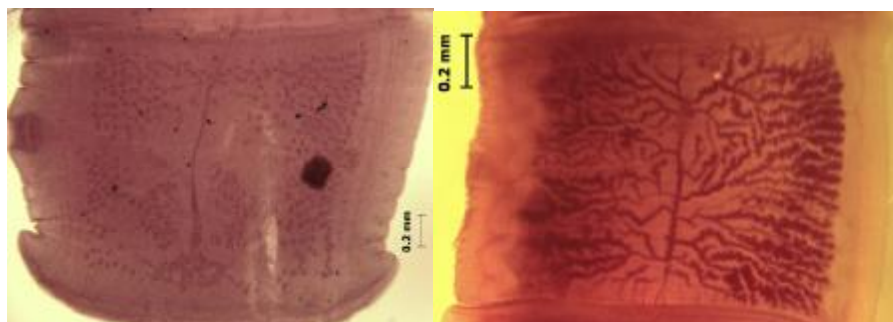


Fig. 3: Comparison shape and length of *Taenia acinonyxi* with other *Taenia* spp.



**Fig.4:** Mature (left) and gravid (right) segment of *T. acinonyxi*

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