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Case Report

A Case Report of Nasopharyngeal Linguatuliasis in Tehran, Iran and Characterization of the Isolated *Linguatula serrata*

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Abstract

A vermiform specimen taken from a 10-year-old boy patient with the chief complain of sneezing, coughing and nasal discharge with a history of consumption of fast snack in the day before and liver of sheep in two weeks ago was referred for diagnosis to the Helminth Taxonomy Laboratory, Dept. of Mdical Parasitology and Mycology, School of Public Health, Tehran University of Medical Sciences, Iran in Dec. 2006. The specimen was processed and examined by light microscope and drew the features of specimen by Camera Lucida. Eventually, the specimen was diagnosed as third nymphal stage of *Linguatula serrata*.

Keywords: Linguatula Serrata, *Iran, Parasitology, Helminthology*

Introduction

There are two main genera of Pentastomids namely *Linguatula* and *Armillifer* involved in human infection. Two species of *L. serrata* and *A. armillatus*, account for more than 99% of all reported human cases (1). *L. serrata* is reported in the tropical regions of the world (3) as well as Iran (4-7). Adult *L. serrata* inhabit the nasal passages and paranasal sinuses of wild and domestic canids, which serve as definitive hosts. Infective eggs containing larvae discharged into the environment by their nasopharyngeal secretions and ingested by herbivorous animals, the natural intermediate hosts (8). Humans may act as both intermediate and aberrant definitive hosts for linguatulids upon ingesting infective eggs and nymphs, respectively (2). Linguatuliasis often goes undetected, but can be diagnosed by clinical signs and symptoms and microscopically examination (9). Nasopharyngeal linguatuliasis or Halzoun-Marrara syndrome is occurred by ingestion of nymphs or third-instar larvae through foods such as raw or undercooked sheep liver or lymph nodes (8).

The most important object of this case report is awareness of health care system to this problem.

Case report

One live, flat, vermiform, white to gray colored organism preserved in normal saline, was referred for diagnosis to the Helminth Taxonomy Laboratory, Dept. of Medical Parasitology and Mycology, School of Public Health, Tehran University of Medical Sciences, Iran. This specimen was isolated from a 10-year-old boy resident in Shahriar County in Tehran Province, with presentation of a discomfort and prickling sensation in the throat, sneezing, coughing and nasal discharges following the consumption of hamburger in the last day and undercooked sheep liver in 2 weeks ago. Grossly, the specimen measuresd 6x2 mm and had a C-shaped anterior end that was wider

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than the cylindrical posterior end. After routine processing, the specimen was examined and drawn by Camera Lucida. In microscopic examination, slide showed an annular tongue-shaped organism with chitinous coverage that fully wore by regular rows of spines arranged as transverse annulations with backward acute angle position. Between rows of spines, regular rows of pores also were evident. In anterior end, two symmetrical pairs of hooks lied on the head with single C-shaped mouth in the middle (Fig.1). On the basis of these descriptive morphologic features, the specimen was diagnosed as third nymphal stage of *serrata* (9).

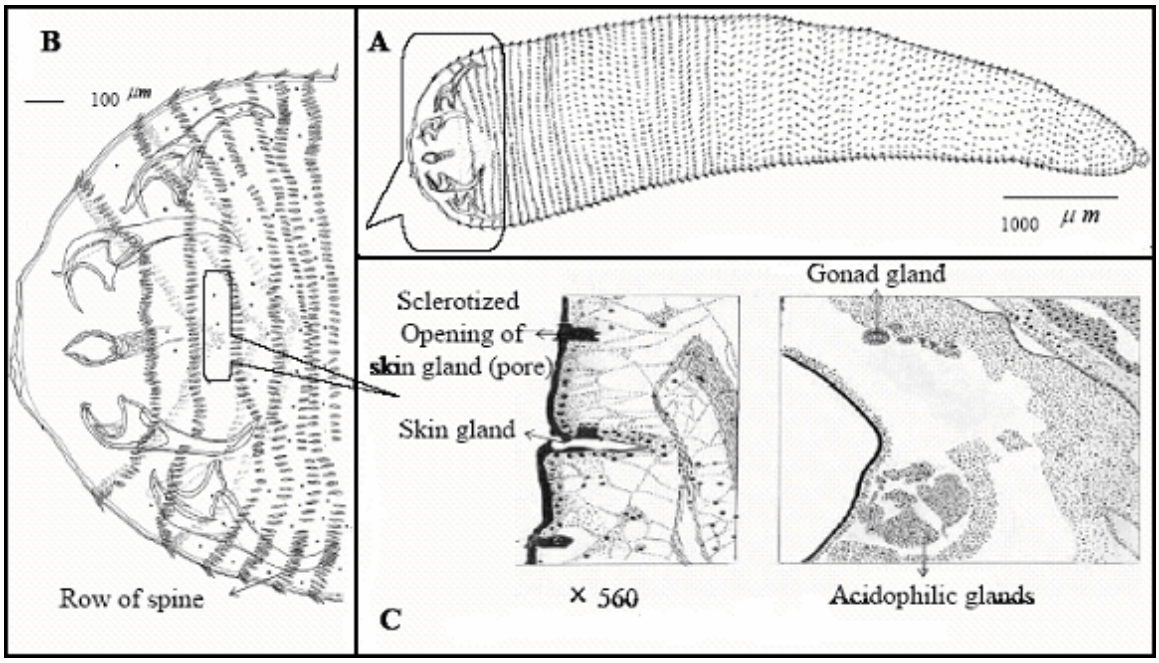

Fig. 1: Pictures of nympal stage of *Linguatula* by Camera Lucida in different power fields

A. whole length of the body of the case.
B. Anterior end of the case showing mouth an 2 pairs of hooks.
C. Schematic picture of the histological slide showing spines, skin glands and their pores, gonad and acidophilic glands (10).

Discussion

Nasopharyngeal linguatuliasis in humans is a synonym for Halzoun or Marrara syndrome, referring to suffocation (11). The disease in humans occurs by ingesting of raw or undercooked liver, visceral lymph nodes or other visceral tissues of the intermediate herbivorous mammal hosts, including sheep, goats, etc., which harbor encysted third-stage larvae. In the human stomach, larvae liberate in gastric juices and migrate up the esophagus and attach on the mucosa of the nasopharynx in the upper respiratory tract within a few hours of eating the infected viscera. In this stage, larvae result in the intensive irritation of the upper respiratory tract and causes acute nasopharyngitis. This condition produces severe inflammation with violent coughing and occasionally causes asphyxiation (3, 11). Other clinical symptoms and signs include frontal headache, sneezing, lacrimation, aural pruritus, coryza, yellow nasal discharge, facial edema, vomiting and edematous congestion of gums, tonsils, eustachian tube and mu-

cosa of the nose and larynx (3, 4,11). This disease is due to migratory phase of the third nymphal stage of parasites, which are transmitted from intermediate host to final host.

On the basis of several reports of linguatuliasis from different areas of Iran(4-6, 12) and in order to control the disease, it is necessary to apply appropriate health measures, to alert physicians about the presence of the disease in the country and to educate people about this parasitic infection.

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