รายงานผู้ป่วย/ **Case report**

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Cysticercosis of the neck – A report of unusual case

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Abstract

Cysticerosis in humans is caused by the larvae of the tapeworm *Taenia solium*, which is normally found in the subcutaneous tissue, brain and eyes. In this report, the rare case of cysticercosis of neck is demonstrated. The diagnosis was performed based on the gross and microscopic examination which *T. solium* larvae are found.

Keywords: cysticercosis, neck mass

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Introduction

An otolaryngologist encountering a neck mass would have several differential diagnosis depending on the clinical course and characteristics. However, age of a patient, duration of symptom, and location of a mass play an important role for the diagnosis. A posterior neck mass in a middle-age adult is a common presentation of nasopharyngeal carcinoma, lymphoma, tuberculous lymphadenitis, and other rare chronic infective diseases. Cysticercosis, however, which is relatively common in the subcutaneous tissue, brain and eyes is rare as head and neck problem.

Cysticercosis in humans is exclusively caused by the larvae of the tapeworm *Taenia solium* which have a predilection for skeletal muscles, eyes and the nervous system. This kind of parasitism is usually encountered by eye and brain specialists. In literature, head and neck manifestation of cysticercosis is reported at soft tissue swelling at submental area, cheek, as well as oral tongue [1-4]. This paper attempts to examine rarity, to report a case of cysticercosis with a neck mass, to describe the clinical course and management of this condition.

Case report

A 35-year-old Cambodian man presented at Pathumthani Hospital with a 3-year-history of neck mass. He had no fever, pain or other constitutional symptoms. Examination revealed a 2x2-cm mass at left upper posterior triangle of neck. The mass was rubbery in consistency, nontender, and rather fixed. Other ENT examination appeared unremarkable. Fine needle aspiration biopsy was performed and revealed nonspecific inflammation and no malignancy. The patient ultimately underwent an excisional biopsy of the mass.

Gross examination revealed an oval-shaped lymph node, 2.5x1x1 cm in size. Sections showed an irregular cyst, 1.5 cm, filed with clear fluid. The cyst wall was 0.1-0.2 cm in thickness, showing yellowish color (Fig. 1). Microscopic examination demonstrated a cystic lesion containing part of parasite. The cystic wall contained granulomatous tissue with acute inflammatory reaction (Fig. 2). Finally, the parasitic granuloma was further studied. The parasitic wall displayed small granules along the cuticle, characteristic of cysticercosis.

Discussion

Taenia solium (T. solium), the pork tapeworm, can cause two distinct forms of infection. The form that develops depends on whether humans are infected with adult tapeworms in the intestine or with larval forms in the tissues, so called cysticercosis. Soft tissue cysticercosis is caused by encysted larvae of *T. solium* which is endemic in many countries of Latin America, Africa, Asia and as well as in some parts of Europe[5]. In many patients involvement of CNS in the form of neurocysticercosis is diagnosed where multiple cystic ring enhancing parenchymal lesions has been detected on contrast enhanced CT. There have been case reports of diffuse cysticercosis combined with epilepsy, myositis and confusional syndrome [6]. A rare case of cysticercosis presenting as a muscle cyst within the triceps has also been reported [7]. Concerning head and neck manifestation, cysticercosis can be presented as soft tissue mass at the submental area, cheek, and oral tongue.

Humans are the only definitive hosts for *T. solium*, while pigs are the usual intermediate hosts, although dogs, cats, and sheep may harbor the larval forms. The adult tapeworm generally resides in the upper jejunum. Its globular scolex attaches by both sucking disks and two rows of hooklets. The tapeworm, usually about 3 meters in length, may have as many as 1000 proglottids each of which produces up to 50,000 eggs. Groups of 3 to 5 proglottids generally are released and excreted into the feces, and the eggs in these proglottids are infective for both humans and animals. The eggs survive in the environment for several months.

After ingestion by the intermediate host, eggs embryonate, then penetrate the intestinal wall, and are subsequently carried to many tissues via systemic circulation. This process has a predilection for striated muscle of the neck, tongue, and trunk. Within 60 to 90 days, the encysted larval stage develops. These cysticerci can survive for long periods. Humans acquire infections that lead to intestinal tapeworms by ingesting undercooked pork containing cysticerci. Infections that cause human cysticercosis follow the ingestion of the parasitic eggs, especially from fecally contaminated food.

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Figure 1 Gross examination revealed an oval-shaped lymph node, 2.5x1x1 cm in size and an irregular cyst, 1.5 cm, filed with clear fluid. The cyst wall was 0.1-0.2 cm in thickness, showing as yellowish color.

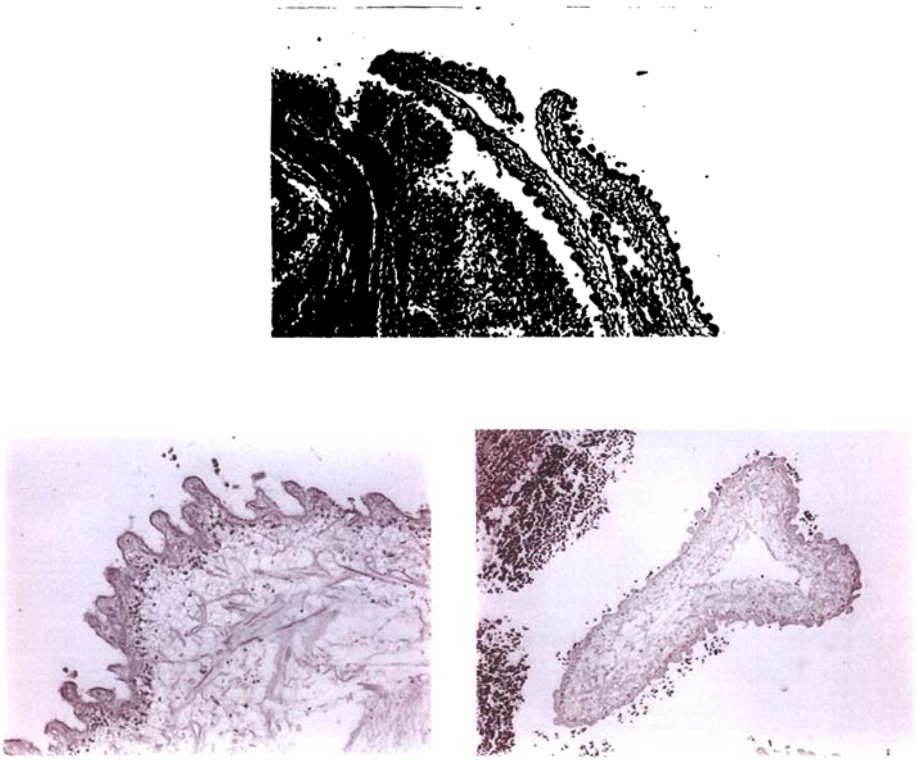

Figure 2 Microscopic examination demonstrated a cystic lesion containing part of parasite. The cystic wall contained granulomatous tissue with acute inflammatory reaction

Autoinfection may occur if an individual with an egg-producing tapeworm ingests eggs derived from his or her own feces or if eggs pass by reflux from the intestine into the stomach. The growing larva in cysticercosis may provoke a series of inflammatory reactions including infiltration of neutrophils and eosinophils, lymphocytes, plasma cells, and at times giant cells, followed by fibrosis and necrosis of capsule with eventual caseation or calcification of the larva [2].

Soft tissue cysticercosis is seen in the form of a painless swelling of a long term duration. Because of its wide availability, ultrasonography could be the preferred initial modality for evaluation of superficial masses. Cysticercosis are seen as well defined anechoic or hypoechoic lesions with or without calcification.

Cysticercosis presenting as a neck mass is diagnosed by microscopic examination in which *T. solium* larvae are found. Definite diagnosis is by the identification of detached hooklets, scolex and fragments of spiral wall of cysticercosis cellulosae. In some cases section smears show no larval parts but contain inflammatory reaction consisting of large number of eosinophils and pallisading histiocytes, which is suggestive of a parasitic cyst. In necrotic lesions with eosinophils, a careful search for fragments of the invaginated portion of the larva should be made. The management of cysticercosis can involve chemo-therapy, surgery, and supportive medical treatment. In cases of cervical lymphadenopathy wide excision of the involved soft tissue should be the mainstay of the treatment.

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