

Sparganosis –a rare case report

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Abstract

Sparganosis is a parasitic infection caused by the plerocercoid larvae of diphylobothroid tapeworms belonging to the genus *Spirometra*. It is a rare disease of human as man is not a natural host of *spirometra* species. Diagnosis of latter is difficult as it mimics other conditions that commonly cause subcutaneous or visceral fluid collection. Here we report a case of Sparganosis in a man who presented with a swelling over left cheek. It was confirmed by pathological and microbiological examination. To the best of our knowledge, this is the first case from Central India where sparganum was isolated from a swelling.

Key words- *Spirometra*, Plerocercoid, Pseudophyllidean

Introduction

Spirometra, a pseudophyllidean cestode is rarely pathogenic in human. Plerocercoid larvae known as sparganum are of public health significance [1]. Once people become infected, the plerocercoid larvae mainly migrate to a subcutaneous tissue manifested as subcutaneous nodule. Although it can also involve brain, pleura, bone, breast, eye etc. Sparganosis is found throughout the world but the major endemic areas are China, Japan, Taiwan, Korea, Vietnam and Thailand [2]. It is very difficult to diagnose preoperatively in most cases but a careful understanding of the ecology and epidemiology coupled with careful examination of the patient and relevant clinical samples can provide useful clues to its diagnosis. In this particular case sparganum was diagnosed mainly by histopathological examination.

Case Report

50 year old male patient, farmer by occupation residing in a village near Bilaspur, Chhattisgarh reported to the OPD in Department of Surgery with chief complain of painful swelling over left cheek for 8 months. He was taken up for pathological examination including FNAC (Fine needle aspiration cytology) and blood examination. Later on excision biopsy was performed.

On Examination- A swelling of 5x4 cm. in size, firm and slightly tender was present over left cheek. No lymph node was palpable. Total and differential blood counts were within normal limit. No eosinophilia was seen. FNAC was done.

Smear studied from the aspirate showed ductal and acinar epithelial cells along with plenty of lymphocytes, plasma cells & eosinophils in an inflammatory background. Findings were suggestive of chronic inflammatory lesion.

Excision biopsy was done and submitted for histopathological examination.

Gross- One soft piece of mass with overlying skin measuring 3x2.5x1cm in size was received. From the center of the tissue a creamish, elongated dead parasite like structure was coming out that was ribbon shaped and measuring 32x 0.5cm.

Microscopy- Sections studied showed a parasite with ciliated outer covering thick integument with deep folds and organ less loose parenchyma surrounded by dense mixed inflammatory infiltrate comprising of lymphocytes, plasma cells, eosinophils and few polymorphs along with plenty of normal salivary glands. There was conspicuous absence of scolex and protoscolex. Parasite was confirmed by renowned entomologist Dr. C. Kuppasamy, Bharathiar University-Coimbatore.



Fig 1: Gross appearance of excisional biopsy

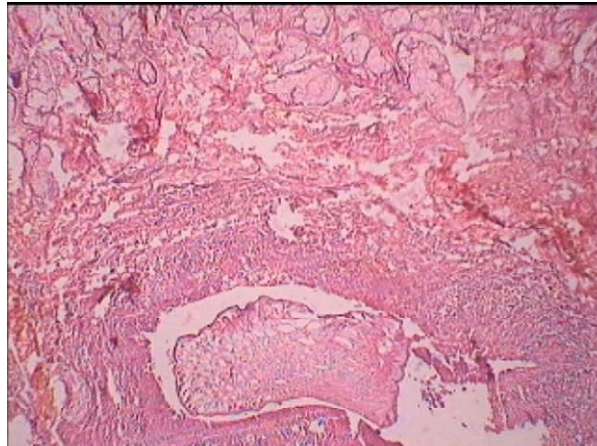


Fig 2: Microscopic appearance (4x)

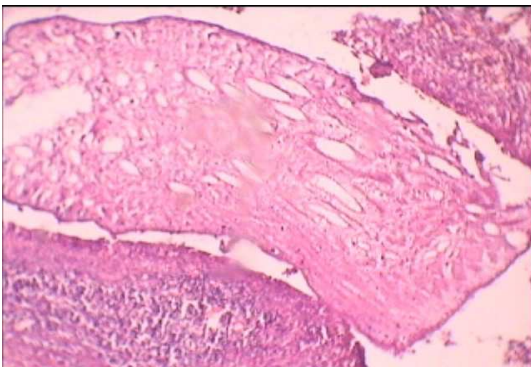


Fig 3: Low power microscopic appearance (10x)

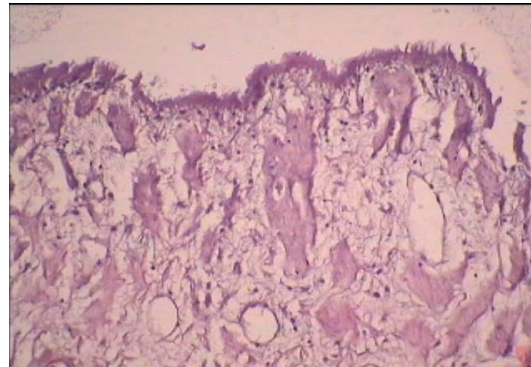


Fig 4: High power microscopic appearance (40x)

Patient was cured following surgical excision and had no complaints in regular follow up.

Discussion

Human sparganum is a rare infection and majority of cases occur in Korea and Japan. Humans are the accidental hosts in the life cycle, while dogs, cats, and other mammals are definitive hosts. Copepods (freshwater crustaceans) are the first intermediate hosts, and various amphibians and reptiles are second intermediate hosts. The parasite is transmitted to humans in three different ways. First, humans may acquire the infection by drinking water that is contaminated with copepods housing *spiroметра* larvae. Second, humans may acquire the infection by consuming the raw flesh of one of the second intermediate hosts, such as frogs or snakes. For example, humans consume raw snakes or tadpoles for medicinal purposes in some Asian cultures; if the snakes or tadpoles are infected, the larvae may be transmitted to humans. Third, humans may acquire the infection by placing raw poultices of the second intermediate hosts on open wounds, lesions, and/or the eyes for medicinal or ritualistic reasons, especially in Vietnam and Thailand. If the poultice is infected with plerocercoid larvae, the human also may become infected [3].

The incubation period ranges from 20 days to 14 months although sparganum can live up to 20 years in human host. The two species most commonly recovered are *S.mansoni* and *S.proliferum*. After consumption by man, the procercooids and plerocercoids fail to develop further therefore they migrate through the intestinal wall and invade various tissues, releasing toxins and causing edema.

Migration of sparganum to internal organ can give rise to visceral form of disease. It can also localize in the brain [4], liver [5], subcutaneous tissues [6], breast and scrotum [7], eye [8] and drain fluid [9]. After death of larvae, severe local inflammation may develop around the larvae resulting in mass like lesion.

Case Report

Sparganosis as a usual practice is diagnosed by the surgical removal of the worm from the site of inflammation but in cases where there is a limited feasibility of surgery, surrogate diagnostic means like antisparganum ELISA (Enzymed linked immune sorbent assay) tests in tune with a relevant history of exposure can be used [10].

Currently no effective treatment for Sparganosis is known. The only treatment is surgical excision of localized infection, although praziquental has been used with limited success [11].

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