

A Case of Sparganosis with Eosinophilic Panniculitis

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Sparganosis is an infection caused by the migrating larvae of the cestode genus *Spirometra*. The most common clinical presentation of a sparganosis is a slow-growing, sometimes migratory, subcutaneous mass. In this report, a case of eosinophilic panniculitis by sparganum in a Korean woman is presented. The diagnosis was confirmed from the histopathologic findings, the micro-ELISA tests and a living sparganum derived from the patient while excising the new lesion (*Ann Dermatol* 14(4) 243~246, 2002).

Key Words : Sparganosis, Eosinophilic panniculitis

Sparganosis is an infection caused by the tapeworm larvae of genus *Spirometra*. The human disease is usually benign, with encystment of larvae in subcutaneous tissue. It is one of the well known endemic parasitic diseases in Korea.

Herein, we present a case of cutaneous sparganosis in a 63-year-old Korean woman. Histologically, the sections showed eosinophilic panniculitis with several empty cavities and the micro-ELISA test for anti-sparganum IgG antibodies was positive (0.54IU/L, normal<0.22IU/L). From these histological and laboratory findings, this case was diagnosed as sparganosis. Thereafter, a gray-white and flat living worm, 3.0×0.1cm in length, was found while excising the new lesion. A transverse section of an intact sparganum revealed an eosinophilic cuticle, loose stroma, calcareous bodies, and smooth muscle fibers.

CASE REPORT

A 63-year-old woman presented with an approxi-

mately 0.2cm in diameter intermittently pruritic subcutaneous nodule on her right thigh, which appeared almost 20 years previously and had been accompanied by a perilesional swelling three months ago (Fig. 1). She denied drinking contaminated stream water or eating raw snakes or frogs, but frequently consumed raw meat and fish.

A microscopic examination revealed eosinophilic panniculitis (Fig. 2, inset) with several empty cavities, approximately 860 μm in diameter (Fig. 2). The cavity wall consisted of a layer of fibrin, necrotic debris and eosinophils, outside of which there was a broad band of histiocytes, fibroblasts, and multinucleated giant cells (Fig.3A). In particular, Charcot-Leyden crystals were present among numerous eosinophils and some necrotic debris, in the form of long slender spindles or hexagonal shape (Fig. 3B).

Laboratory studies including a complete blood count, urinalysis, liver function test, stool examination, and an eosinophil count were either within the normal limits or negative. The IgE level had increased to 353.8IU/mL, and the micro-ELISA test for anti-sparganum IgG antibodies was positive (0.54IU/L, normal<0.22IU/L). From these histological and laboratory findings, this case was diagnosed as sparganosis. Approximately 40 days after the biopsy, the patient revisited the clinic with an asymptomatic 0.5×0.5cm subcutaneous nodule which recently formed approximately 2cm away from the previous lesion. Interestingly, a gray-white and flat living worm, 3.0×

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Fig. 1. An intermittently pruritic subcutaneous nodule with perilesional swelling on right thigh.



Fig. 2. Eosinophilic panniculitis with an empty cavity, approximately 860 μ m in length (arrow, H&E, \times 40). (Inset ; numerous eosinophils, H&E, \times 400).

DISCUSSION

Sparganosis occurs worldwide in humans and it is quite common in Korea, China, Japan, and South-east Asia. The definitive hosts for the adults



Fig. 3A. The inner-most zone of the cavity consists of fibrin, necrotic debris, eosinophils and the next zone consists of a band of histiocytes and fibroblasts (H&E, \times 100). 3B. Charcot-Leyden crystals (arrow, H&E, \times 400).



0.1cm in size, was found while excising the new lesion (Fig. 4A&B).

A histopathologic section of the worm showed a body wall consisting of thick tegument, smooth muscle layers and tegumental cells. The parenchyma was composed of loose stroma, mesenchymal fibers, smooth muscle bundles and calcareous bodies of varying sizes. The macro and microscopic findings of the worm were consistent with a sparganum.

Spirometra are dogs and cats. There are three routes of infection in humans. First is by drinking water containing an infected *Cyclops*. Another route consists of ingesting the flesh of an infected intermediate host such as a snake, fish, or amphibian. The most unusual route involves the accidental transmission of the plerocercoid while wounds are treated by application of poultices of raw flesh ; this treatment of wounds was used in some Asian

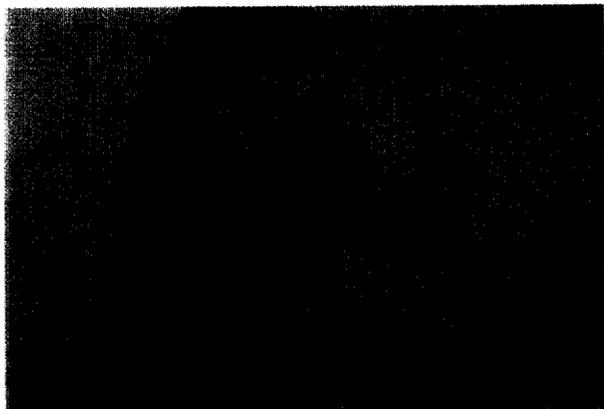


Fig. 4A. A gray-white flat worm, 3.0×0.1 cm in size. 4B. A sparganum that is $900 \mu\text{m}$ in width (arrow, H&E, $\times 40$).

countries.

The most common clinical presentation of a sparganosis is a slow-growing, sometimes migratory, subcutaneous mass. Pathologically the host tissue reaction against the sparganum is fairly characteristic. Along the tract of the moving parasite, the host tissue is destroyed and becomes necrotic with numerous nuclear debris, fibrin deposits, and inflammatory cells. A layer of fibrin and necrotic debris, and eosinophils exist in the inner-most zone, and on the outside, there is a broad band of histiocytes and fibroblasts. Next to this, a broad zone extends into the surrounding fibroadipose muscular tissue, consisting of a heavy infiltration of eosinophils and some granulation tissue and lymphoplasmocytic cells¹⁻³.

In our case, the inner-most zone was thick and irregular. It consisted of fibrin, necrotic debris, eosinophils and numerous Charcot-Leyden crystals. Charcot-Leyden crystals are distinctive bipyramidal, hexagonal structures that are observed in association with eosinophilic cellular inflammatory reactions and are useful indicators of an active eosinophilic infiltration or proliferation^{4,5}.

Grossly the lesion may be composed of an elongated tract-like cavity with or without a tape-like parasite. This case showed an eosinophilic panniculitis involving the septa and lobules of the subcutaneous tissue. Eosinophilic panniculitis is a reaction pattern in the following clinical diseases: erythema nodosum, vasculitis, arthropod bites, parasitic infestations, drug injections, Wells' syndrome, hyper-eosinophilic syndrome and eosinophilic leukemia⁶.

The larva migrans are usually classified as cutaneous larva migrans (creeping eruption), larva mi-

grans profundus and visceral larva migrans. The histopathologic findings, which are characterized by cavity formation and abundant eosinophilic infiltration in the deep dermis and subcutaneous tissue, have also been reported in the larva migrans profundus by *Gnathosoma* larvae and the visceral larva migrans by *Toxocara* larvae⁷.

It is suggested that sparganum might be classified as one of the causes of larva migrans profundus or visceral larva migrans. This is because sparganosis is caused by the migrating larva, sparganum, and may cause an eosinophilic inflammation with cavity formation in the visceral organs in addition to the skin.

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