

## *Tetragomphius melis* Infection of the Pancreas in Japanese Badger (*Meles meles anakuma*)

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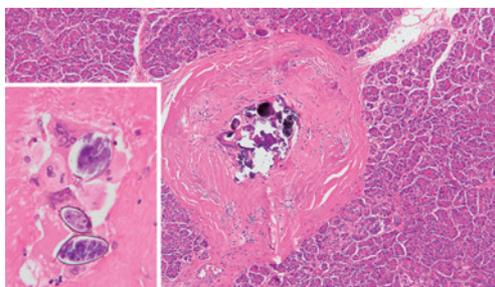


Fig. 1

Parasitic infections, such as echinococcosis and schistosomiasis, rarely occur in the human pancreas (Fig. 1). However, parasites exhibiting pancreatic tropism are hardly known in humans. On the other hand, there are unique parasites inhabiting exclusively in the pancreas of animals. *Tetragomphius melis* is a nematode belonging to the family Ancylostomatidae. It was first found in the pancreatic duct of a Japanese badger (*Meles meles anakuma*) captured in Gifu prefecture, located in the central region of Japan in 1974<sup>1</sup>. Subsequent investigations have revealed that the pancreatic duct of over 90% of Japanese badgers in various regions of Japan are infected with *T. melis*<sup>2,3</sup>. The most characteristic appearance of this parasitic lesion is a tumor-like mass formed in the pancreatic tail (Fig. 2a). These masses can grow to over 6 cm and be felt on palpation of the abdomen. There was even a case that a veterinary clinician misdiagnosed the mass as neoplastic lesion and performed surgery on it. Although the life cycle of *T. melis* is not well clarified, it is considered that the nematodes migrate upstream on the pancreatic duct from the opening to the terminal duct and form a mass in the pancreatic tail. The masses were composed of granulation or fibrous tissue centered at the worms (Fig. 2). Although the wall of the pancreatic duct becomes thickened by fibrosis, the surrounding parenchyma is relatively intact and therefore the parasites are thought to have little effect on the health of the host. This fact suggests that this unique parasite has evolved together with the host animal over many generations and built a less harmful relationship.

**Conflict of Interest:** The authors declare no conflict of interest.

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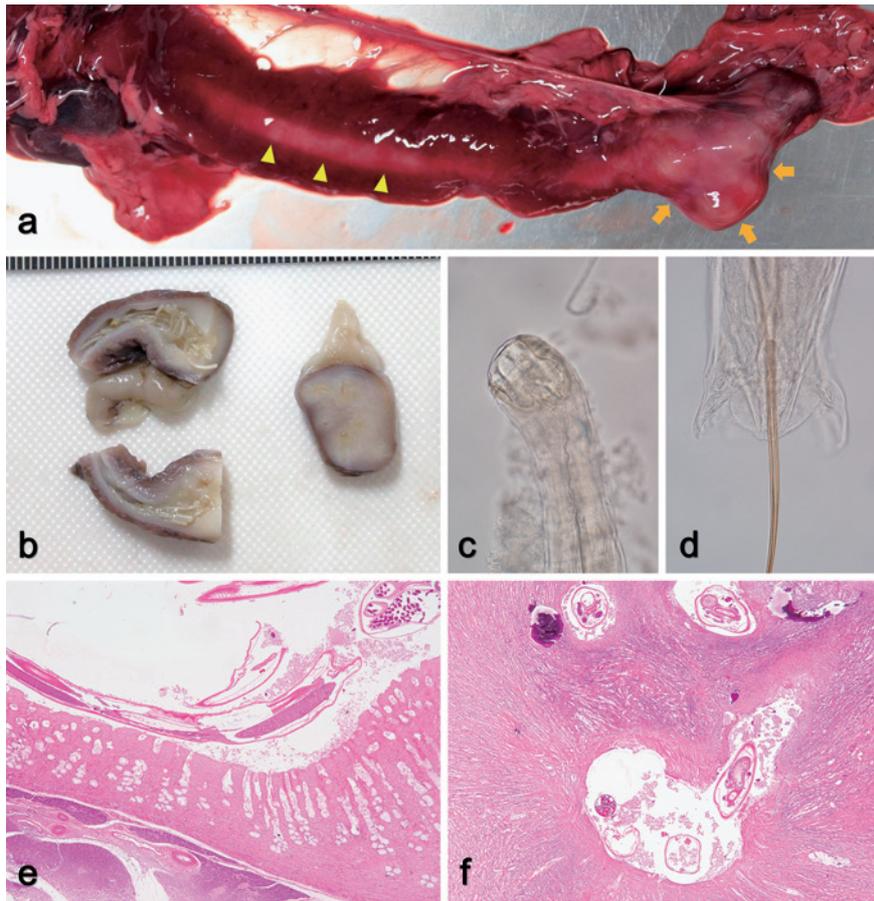


Fig. 2

**Fig. 1.** An autopsy case of a 77-year-old man. Calcified *Schistosoma japonicum* eggs in the fibrosing lesion of pancreas.

**Fig. 2.** (a) Pancreas, Japanese badger infected with *Tetragomphius melis*. A tumor-like mass is formed in the pancreatic tail (**arrows**). The main pancreatic duct becomes thickened (**arrow heads**).  
 (b) Longitudinal section of the main duct (**left**) and cross section of the mass (**right**). Many nematodes fill in the lumen of main duct.  
 (c) Anterior end of the male nematode.  
 (d) Tail end of male nematode showing copulatory bursa, spicules and bursal rays.  
 (e) Histological view of longitudinal section of the main duct. Nematodes are found within the lumen of the main duct. The wall of duct is thickened by fibrosis.  
 (f) Histological view of the cross section of the mass. Nematodes lie centrally in the extensive fibrosing lesion.

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