

Extra-hepatic fascioliasis with peritoneal malignancy tumor feature

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Abstract Fascioliasis is a zoonose parasitic disease caused by *Fasciola hepatica* and *Fasciola gigantica* and is widespread in most regions of the world. Ectopic fascioliasis usually caused by juvenile *Fasciola* spp., but in recent years a few cases of tissue-embedded ova have been reported from different endemic areas. A 79-year-old Iranian man resident in Eird-e-Mousa village from Ardabil Province, north-west of Iran, complained with abdominal pain, nausea, and intestinal obstruction symptoms referred to Ardabil Fatemi hospital. In laparotomy multiple intestinal masses with peritoneal seeding resembling of a malignant lesion were seen. After appendectomy and peritoneal mass biopsy with numerous intraperitoneal adenopathy, paraffin embedded blocks were prepared from each tissues. A blood sample was taken from the patient 5 months later for serological diagnosis. Histopathological examination of sections showed fibrofatty stroma with dense mixed inflammatory cells infiltration and fibrosis in peritoneal masses. Large numbers of ova of *Fasciola* spp. were noted with typical circumscribed granulomas. Despite of anti-fasciola treatment, IHA test for detecting anti *F. hepatica* antibodies was positive 5 months after surgery

with a titer of 1/128. Due to multiple clinical manifestation of extra-hepatic fascioliasis, its differential diagnosis from intraperitoneal tumors or other similar diseases should be considered.

Keywords Extra-hepatic fascioliasis · Peritoneal tumor · Ardabil · Iran

Introduction

Fascioliasis is a zoonose parasitic disease caused by *Fasciola hepatica* and *Fasciola gigantica* and is widespread in most regions of the world. Human infection occurs by ingesting of encysted metacercariae associated with aquatic or semi-aquatic plants, or by contaminated drinking water with float metacercariae (WHO 2011). Fascioliasis is a major health problem especially in north of Iran (Mas-Coma et al. 1999; Eslami et al. 2009). Ectopic fascioliasis usually caused by juvenile *Fasciola* spp. (Lee et al. 1982; Chang et al. 1991; Zali et al. 2004; Yi-Zhu and Zhi-Bang 2010), but in recent years a few cases of tissue-embedded ova have been reported from different areas (Yazici et al. 2005; Naresh et al. 2006; Makay et al. 2007; Marcos et al. 2009; Ongoren et al. 2009). In this report, an unusual manifestation of ectopic fascioliasis in peritoneum is presented.

Materials and methods

A 79-year-old Iranian man resident in Eird-e-Mousa village from Ardabil Province, north-west of Iran, complained with abdominal pain, nausea, and intestinal obstruction symptoms referred to Ardabil Fatemi hospital. The patients had reported a history of occasional mild abdominal pain

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within the last 6 months. In blood examination the white blood cells count was $16,200/\text{mm}^3$ and other parameters were normal. Urine analyses did not show any abnormality. The patient was operated with impression of intestinal obstruction. In laparotomy multiple intestinal masses with peritoneal seeding resembling of a malignant lesion were seen. Moreover local intestinal necrosis and multiple lymphadenopathies were noticed.

After appendectomy and peritoneal mass biopsy with numerous intraperitoneal adenopathy, paraffin embedded blocks were prepared from each tissues. Briefly, tissue samples from the mass were fixed in 10% formalin, processed routinely and sections were stained with hematoxylin and eosin (H&E). Considering that *Fasciola* infection is not endemic in human in Ardabil Province, the serological test had not been performed at the time of admission or just after the surgery, and the treatment was performed by administration of triclabendazole 10 mg/kg twice daily at 12 h interval according to finding of *Fasciola* spp. ova in pathological examination. A blood sample was taken from the patient 5 months later for serological diagnosis. Consumption of streamlet row vegetables such as watercress was usual in patient's habitat.

Results and discussion

Histopathological examination of sections showed fibrofatty stroma with dense mixed inflammatory cells infiltration and fibrosis in peritoneal masses. The inflammatory cells were consists of lymphoplasma cells and abundant eosinophils. Large numbers of ova of *Fasciola* spp. were also noted with typical circumscribed granulomas (circumoval granulomas) (Figs. 1, 2, 3). A few circumscribed granulomas were also noted on the serosa of appendix and perinodal soft tissues. Despite of anti-fasciola treatment, IHA test for detecting anti-fasciola antibodies was positive 5 months after surgery with a titer of 1/128. Patient had no complaints of abdominal pain or other related symptoms 5 months after the treatment.

While both *F. hepatica* and *F. gigantica* live in the large biliary tracts and gallbladder normally and are the cause of histopathologic effects in these organs, extra-hepatic fascioliasis was documented in different organs of human especially in endemic areas (Zali et al. 2004; Naresh et al. 2006; Vatsal et al. 2006; Ongoren et al. 2009; Yi-Zhu and Zhi-Bang 2010). Some reports have confirmed the migration of juvenile *Fasciola* spp. (Lee et al. 1982; Chang et al. 1991), also existence of gravid *Fasciola* in some organs was reported based on observation of tissue-embedded ova (Yazici et al. 2005; Naresh et al. 2006; Makay et al. 2007; Ongoren et al. 2009).

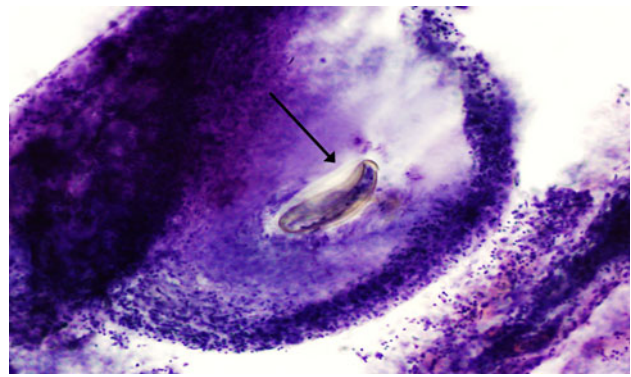


Fig. 1 Circumoval granulomas with operculated egg of *Fasciola* spp. stained with hematoxylin and eosin

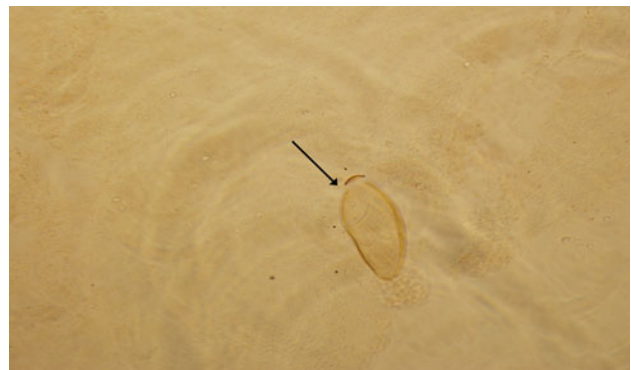


Fig. 2 Tissue-embedded operculated egg of *Fasciola* spp. (unstained)

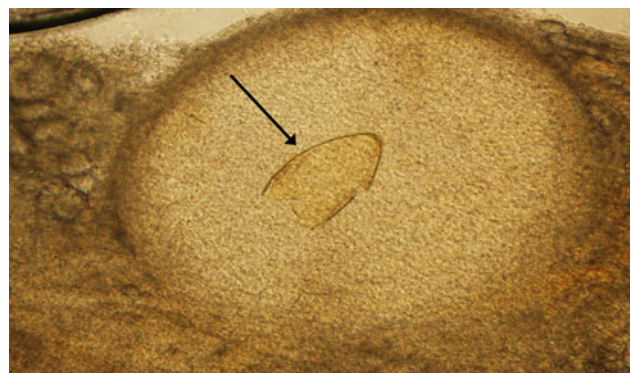


Fig. 3 Pressured smear (between two slides) shows *Fasciola* egg wall in peritoneal mass

In this report high numbers of *Fasciola* spp. ova were diagnosed in circumscribed granulomas from peritoneum and intestine wall. Operculated ova had same size range of *Fasciola* spp. ($>130 \mu\text{m}$).

Observation of many operculated ova with $>130 \mu\text{m}$ length in circumscribed granulomas, beside other histopathological findings such as the abundant eosinophils in granulomas, and also detection of anti-fasciola antibody by

IHAT helped us to diagnosis *Fasciola* spp. as a causative agent for the patient.

Due to multiple clinical manifestation of extra-hepatic fascioliasis, its differential diagnosis from intraperitoneal tumors or other similar diseases should be considered. Moreover because of existence of *Fasciola* spp. infection in sheep in this area and considering the food habits of residents, for using streamlet row vegetables, further surveys are needed for determination of fascioliasis prevalence in this area.

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