



## Case report

Hepatic mass caused by *Fasciola hepatica*: A case reportKrishna Adhikari <sup>a</sup>, Navin Poudel <sup>b,\*</sup>, Sumita Pradhan <sup>a</sup>, Ramesh Singh Bhandari <sup>a</sup><sup>a</sup> Department of Surgical Gastroenterology, Tribhuvan University Teaching Hospital, Kathmandu, Nepal<sup>b</sup> Maharajgunj Medical Campus, Tribhuvan University Institute of Medicine, Kathmandu, Nepal

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## ABSTRACT

**Introduction:** Fascioliasis is a zoonotic infestation which presents with a wide spectrum of clinical pictures. However, it may often be overlooked, especially in the acute phase, because of uncertain symptoms. *Fasciola hepatica* can have an initial presentation similar to malignant liver mass or complex hepatic cyst. Here, we report a case of a hepatic mass caused by fasciola hepatica.

**Case presentation:** A 48-year-old woman came with chief complaints of epigastric and right hypochondrial discomfort associated with nausea and vomiting. Ultrasonography (USG) showed a heterochronic lesion in the segment VIII of the liver with few cystic lesions. CECT abdomen and pelvic gave impression of ill-defined irregular hypodense lesions in the right lobe of the liver with progressive enhancing peripheral and central cystic areas suggestive parasitic liver infestation likely echinococcus alveolaris. Right hepatectomy was done and the patient was discharged without any complications.

**Discussion:** Fascioliasis is uncommon in developed countries but more commonly seen in developing countries. The identification of fasciola hepatica eggs in the stool is a standard method for the diagnosis of fascioliasis. Fascioliasis may cause a wide variety of clinical signs ranging from asymptomatic infection to severe liver cirrhosis. Surgery for complex hydatid cysts of the liver is potentially burdened by serious complications. Technique of choice for surgical management remains inconclusive.

**Conclusion:** *Fasciola hepatica* infection can mimic a malignant liver mass or a complex hepatic cyst because of its uncertain presentation. The disease can be prevented with public education and environmental precautions.

## 1. Introduction and importance

*Fasciola hepatica*, a parasitic flatworm of the class Trematoda, Phylum Platyhelminthes that infects the liver of various mammals, including humans, is rarely found in Nepal [1]. However, it is commonly observed in developing countries. The incidence has been increasing since the year 1980. Food-borne trematodes are a group of neglected tropical diseases [2]. The parasite has a complex life cycle that includes a hepatic phase as well as a biliary phase. In the hepatic phase, the parasite is reported to remain within the liver for 6–9 weeks [3]. The triad of fever, right upper quadrant pain, and absolute peripheral blood eosinophilia should raise suspicion of hepatic fascioliasis [4].

Here, we present a case of a hepatic mass caused by fasciola hepatica that was initially thought to be a complex hydatid cyst caused by echinococcus multilocularis. The case has been reported in line with SCARE 2020 criteria [5].

## 2. Case presentation

A 48-year-old woman came with chief complaints of epigastric and right hypochondrium discomfort associated with nausea and vomiting for the last two months. The patient with no previous symptoms presented with back pain and abdominal distension. The patient's symptoms had been continuously increasing for the past month. The patient also had concurrent nausea, epigastric and right hypochondrium pain, and loss of appetite. The patient was first presented to another hospital, where ultrasonography (USG) was done which showed a 3.8 by 3.2 cm size heyperechoic lesion in the segment VIII of the liver with few cystic lesions. At our center investigation in the line of hepatic mass to rule out any malignancy was done. On further investigation, her tumor markers were AFP: 2.71, CEA: 0.99 and CA-19.9: less than 1.4, and CECT abdomen and pelvic (Fig. 1) revealed ill-defined irregular hypodense lesions 9 × 9 × 3.9 cm in the right lobe of the liver (segment V, VI, VII, VIII) with progressive enhancing peripheral and central cystic areas suggestive parasitic liver infestation likely *Echinococcus alveolaris*.

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**Fig. 1.** CECT showing ill-defined irregular mass in the right lobe of the liver (segment V, VI, VII, VIII).

*Echinococcus* IgG was 2.79, which was positive for *Echinococcus*. Albendazole 400 mg twice a day was started and the patient was planned for right hepatectomy. A complete blood count was performed that showed eosinophil 8 % (TLC: 6300/mm<sup>3</sup>, N: 40 %).

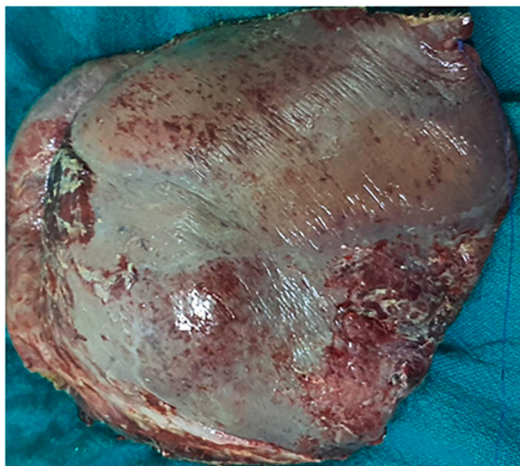
After all preoperative evaluation including liver volumetry. She underwent a right hepatectomy. The intraoperative finding was multiple necrotic cystic lesions at segments V, VI, VII, and VIII of the liver (Fig. 2). The histopathology report (Fig. 3) shows multiple granulomas with palisading histiocytes, calcification, multinucleated giant cells with central neutrophilic abscess, cholesterol cleft areas of necrosis. Few parasitic parts of egg with brown wall and increased bile stasis and Charcot Leyden crystals (Fig. 3).

The postoperative outcome of the patient was uneventful and was discharged on the 7th POD. The patient party is satisfied with the treatment they received. The patient is good at recent followup.

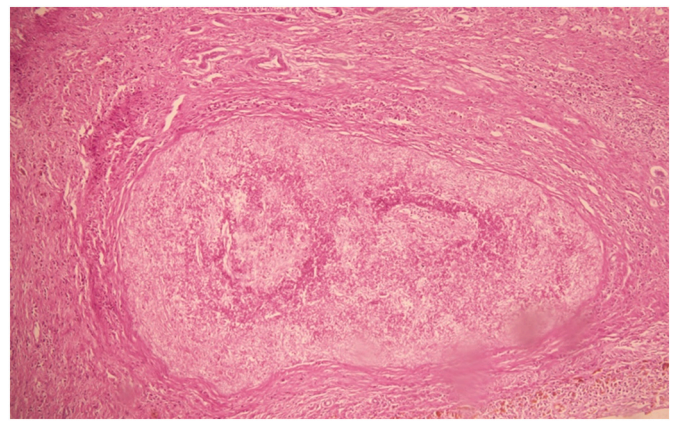
### 3. Clinical discussion

Fascioliasis is uncommon in developed countries but more commonly seen in developing countries. The identification of fasciola hepatica eggs in the stool is a standard method for the diagnosis of fascioliasis [6].

The parasites do not pass eggs in the acute stage of the disease before they become adults, although the symptoms of the disease are the most severe at this time. Additionally, parasite eggs may not be detected when



**Fig. 2.** Hepatectomy surgical specimen with multiple necrotic cystic lesions.



**Fig. 3.** Histopathology slide of resected mass showing multiple granulomas with palisading histiocytes, calcification, multinucleated giant cells with central neutrophilic abscess.

the parasite lays eggs in intervals, which was observed in cases of chronic fascioliasis when the parasite has an ectopic location [7].

Humans are infected by eating water plants. Fascioliasis may cause a wide variety of clinical signs ranging from asymptomatic infection to severe liver cirrhosis. *Fasciola hepatica* has two phases: the acute (hepatic) and chronic (biliary) phases. Nausea, fever, right hypochondrium pain, hepatomegaly, and hypereosinophilia with or without urticaria are seen in the acute phase [7]. The patient had the periodic type of right upper quadrant pain with nausea and loss of appetite. There were no symptoms of extra biliary tract obstruction though the patient of fascioliasis in the chronic phase presented with features of extra biliary tract obstruction. In non-endemic areas, diagnosis of fascioliasis can be difficult and usually delayed because the disease is not often encountered; the symptoms may also be confused with other hepatic or biliary disorders [6].

Serologic tests that are essential for diagnosing acute fascioliasis include FAST-ELISA, indirect hemagglutination, complement fixation, indirect immunofluorescence (IIF), counter electrophoresis, and double diffusion. However, even though these tests are quite sensitive, they may cross-react with other parasitic infections, such as echinococcus, which is relatively common in Nepal. In our case, the ELISA test for echinococcus was positive and the patient was treated with albendazole.

FAST-ELISA has a sensitivity rate of 95 %, although the exact specificity has not been determined [9,10].

Cysts larger than 15 cm, or compressing main vascular structures, or located in both hemilivers should be considered, as well as complicated cysts, in the category of complex hydatid cysts [11].

In our case, the diagnosis of complex hydatid cyst was also made and planned for right hepatectomy (Fig. 2). Surgery for complex hydatid cysts of the liver is potentially burdened by serious complications. This kind of benign liver disease requires skill-demanding procedures and should be treated in centers with expertise in both hepato-biliary surgery and hydatid disease management [11].

There is a case report by Yen TJ et al. in which they have done right hepatectomy for chronic liver abscess and postoperative histological examination showed *Fasciola hepatica* infection [12]. Similarly, we also thought the case to be complex hydatid cyst and did right hepatectomy.

### 4. Conclusion

*Fasciola hepatica* can mimic a malignant liver mass or complex hepatic cyst. It may often be overlooked, especially in the acute phase, because of uncertain symptoms. *Fasciola hepatica* can have an initial presentation similar to malignant liver mass or complex hepatic cyst. Fascioliasis can be prevented with public education and environmental precautions such as avoiding the consumption of contaminated water

and plants.

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#### Ethical approval

Case reports are exempt from ethical approval in our institution, Tribhuvan University Institute of Medicine, Maharajgunj.

#### Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

#### CRediT authorship contribution statement

Concept of study, and data collection: Navin Poudel

Writing of manuscript: Krishna Adhikari, Navin Poudel

Surgical therapy for patient: Sumita Pradhan, Ramesh Singh Bhandari.

All the authors individually did the final proof-reading of the manuscript before submission.

#### Registration of research studies

Not applicable.

#### Guarantor

Navin Poudel.

#### Declaration of competing interest

There are no any conflicts of interest.

#### References

- [1] R. Sah, S. Khadka, M. Khadka, et al., Human fascioliasis by *Fasciola hepatica*: the first case report in Nepal, *BMC Res. Notes* 10 (2017) 439.
- [2] T. Furst, J. Keiser, J. Utzinger, Global burden of human foodborne trematodiasis: a systematic review and meta-analysis, *Lancet Infect. Dis.* 12 (2012) 210–221.
- [3] T.J. Yen, C.H. Hsiao, R.H. Hu, K.L. Liu, C.H. Chen, Education and imaging: hepatobiliary and pancreatic: chronic hepatic abscess associated with fascioliasis, *J. Gastroenterol. Hepatol.* 26 (2011) 611.
- [4] F. Arslan, A. Batirel, M. Samasti, Fascioliasis: 3 cases with three different clinical presentations, *Turk. J. Gastroenterol.* 23 (2012) 267–271.
- [5] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, A. Kerwan, A. Thoma, et al., The SCARE 2020 guideline: updating consensus Surgical CAse REport (SCARE) guidelines [cited 2022 Jul 23], *Int. J. Surg.* 84 (2020 Dec 1) 226–230. Available from: <https://pubmed.ncbi.nlm.nih.gov/33181358/>.
- [6] L.A. Marcos, M. Tagle, A. Terashima, A. Bussalleu, C. Ramirez, C. Carrasco, L. Valdez, J. Huerta-Mercado, D.O. Freedman, J.M. Vinetz, Natural history, clinicoradiologic correlates, and response to triclabendazole in acute massive fascioliasis, *Am. J. Trop. Med. Hyg.* 78 (2008) 222.
- [7] W. Apt, X. Aguilera, F. Vega, C. Miranda, I. Zulantay, C. Perez, M. Gabor, P. Apt, Treatment of human chronic fascioliasis with triclabendazole: drug efficacy and serologic response, *Am. J. Trop. Med. Hyg.* 52 (1995) 532–535.
- [9] G.V. Hillyer, M. Soler de Galanes, J. Rodriguez-Perez, J. Bjorland, M. Silva de Lagrava, S. Ramirez Guzman, R.T. Bryan, Use of the falcon assay screening test-enzyme-linked immunosorbent assay (FAST-ELISA) and the enzyme-linked immunoelectrotransfer blot (EITB) to determine the prevalence of human fascioliasis in the Bolivian altiplano, *Am. J. Trop. Med. Hyg.* 46 (1992) 603.
- [10] S. Carnevale, M.I. Rodriguez, G. Santillan, J.H. Labbe, M.G. Cabrera, E. J. Bellegarde, J.N. Velasquez, J.E. Trgovcic, E.A. Guarnera, Immunodiagnosis of human fascioliasis by an enzyme-linked immunosorbent assay (ELISA) and a micro-ELISA, *Clin. Diagn. Lab. Immunol.* 8 (2001) 174–177.
- [11] A. Fancellu, T. Perra, D. Vergari, et al., Management of complex liver cystic hydatidosis: challenging benign diseases for the hepatic surgeon: a case series report from an endemic area, *Medicine (Baltimore)* 99 (48) (2020) 23435.
- [12] T.J. Yen, C.H. Hsiao, R.H. Hu, et al., Hepatobiliary and pancreatic: chronic hepatic abscess associated with fascioliasis, *J. Gastroenterol. Hepatol.* 26 (2011) 611.