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## Case Report

# Gallbladder schistosomiasis – a rare presentation as gallbladder polyp: a case report ☆☆☆

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## ABSTRACT

**Background:** Schistosomiasis is a neglected tropical disease second to malaria in prevalence with significant morbidity and mortality. Although, Schistosomiasis can affect multiple organs, gallbladder involvement is very rarely reported. We present a case of isolated gallbladder schistosomiasis in a 20-year-old female presenting as gallbladder polyp radiologically and also correlated the histopathological findings which to our knowledge has never been reported in the English literature. A high index of suspicion should be made for considering Schistosomiasis when an individual hailing from endemic region presents with gallbladder pathologies.

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## Background

Schistosomiasis is the second most common tropical disease worldwide after malaria [1]. Among the most common Schistosoma species infecting humans, *Schistosoma japonicum* is the most pathogenic and most difficult to treat due to its zoonotic nature. Although clinical and radiological presentation of hepatic schistosomiasis is relatively understood, gallbladder pathology is less known which can at times pose diagnostic dilemma [2]. We report a case of *S. japonicum* with atypical radiological presentation of the gallbladder as gallbladder polyp and describe its histopathological findings.

## Case presentation

A 20-year-old female came to our hospital with complain of pain in right upper abdomen for a period of 6 months. She denies any travel history to endemic region for Schistosomiasis. No any history of bladder and bowel abnormalities were present. No any immunocompromised status is noted. On physical examination, minimal tenderness in the right upper quadrant was present, however, no any definite mass was palpable. There was no hepatosplenomegaly. No pallor or icterus was evident. Laboratory tests including white blood cells, liver function test was within normal range. An

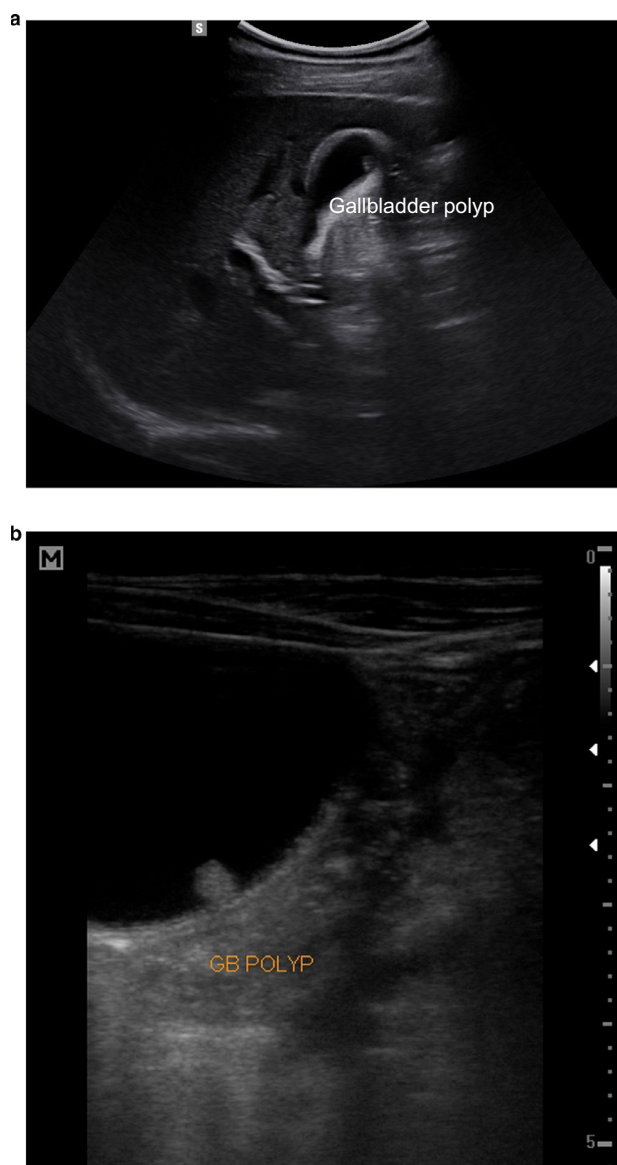
Abbreviations: *S. japonicum*, *Schistosoma japonicum*.

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**Fig. 1 – (a) Axial ultrasound image demonstrates diffusely thickened gallbladder wall and an echogenic polypoid lesion with no posterior acoustic shadowing at the fundal region of gallbladder. (b) Zoomed ultrasound image demonstrates gallbladder polyp. No foci of calcification or cystic areas are noted.**

abdominal ultrasound on fasting state demonstrated a polypoid lesion measuring 3 mm in the posterior wall in the fundal region of the gallbladder as well as diffusely thickened gallbladder wall (Fig. 1a, b). No foci of calcification were noted within the polyp. No any hepatic abnormality was noted. Patient underwent a laparoscopic cholecystectomy where gallbladder wall was thickened and appeared gray in color. On histopathological examination, section from the thickened area in the fundus showed numerous well-formed epithelioid cell granulomas with multinucleated giant cells scattered

in the lamina and muscular layer. Granulomatous reactions were seen surrounding round to oval transparent structures resembling shell of parasitic eggs. Inflammatory infiltrates comprising mainly eosinophils mixed with lymphocytes and plasma cells were seen throughout the wall. The serosa was edematous with dilated and congested vasculature. Section from the polyp demonstrated normal looking mucosa and numerous granulomas with parasitic eggs. No dysplasia was however noted (Fig. 2a–d). A microscopy for stool was positive for the eggs of *Schistosoma japonicum*. Postoperatively patient was started on Praziquantel. Patient was followed up for the last 3 years with no history of intestinal/genitourinary or hepatic manifestations.

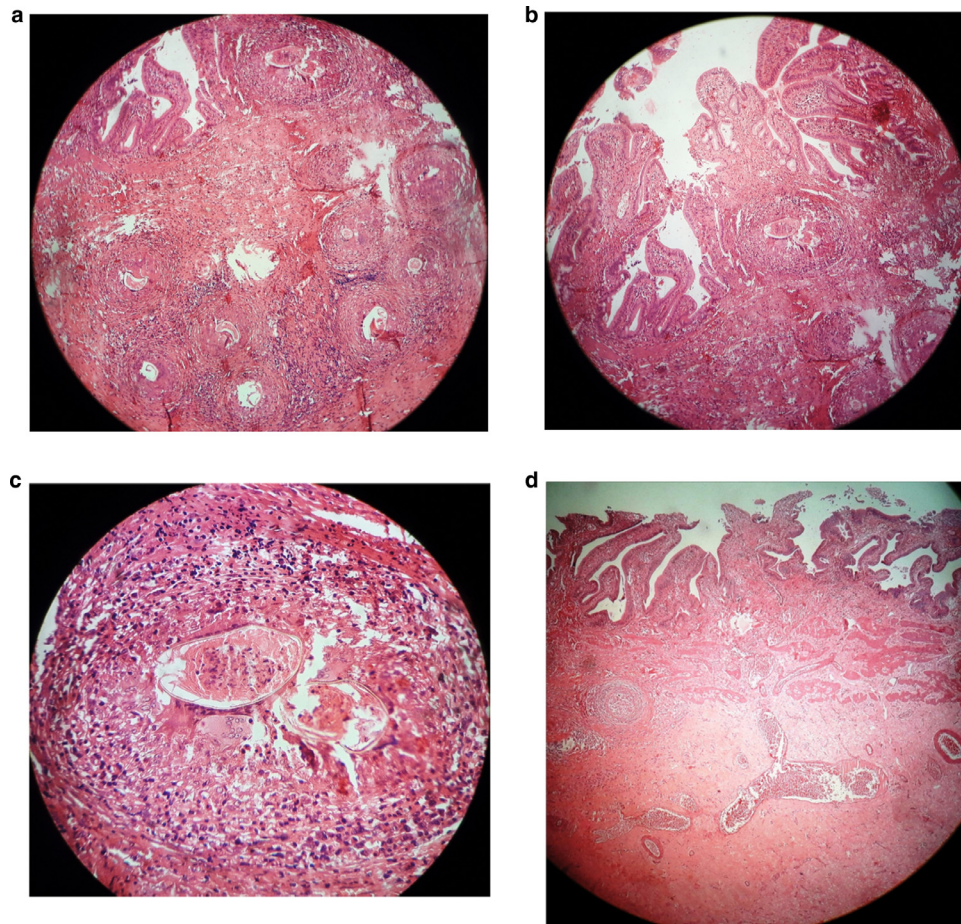
### Discussion and conclusion

Schistosomiasis is a neglected, however, second most prevalent tropical disease in the world with more than 779 million people at risk of infection [1, 3]. It has been estimated that more than 230–250 million people are infected annually of which 120 million are symptomatic and 20 million have severe clinical disease. Among the 3 most common species of Schistosomiasis affecting humans, *S. japonicum* is the most pathogenic and difficult to treat due to its zoonotic nature. *S. japonicum* lives in the bowel lumen where they lay eggs in the mesenteric veins which later embolize to the liver via the portal vein. A granulomatous inflammatory response is elicited in the liver, subsequent fibrosis and resultant portal hypertension [4]. Gastrointestinal, hepatosplenic, and neurological complications are usually noted in the later stages.

Although hepatic fibrosis have been extensively noted in the endemic regions, hepatic pseudotumor appearance have also been described at times which posed diagnostic dilemma [5]. An association of Schistosomiasis and biliary tract malignancies including cholangiocarcinoma has been noted in various studies [6].

Gallbladder involvement in schistosomiasis is rare and is usually seen in late stages of schistosomiasis. A constellation of findings in other organs are usually already present. Gallbladder schistosomiasis presenting in isolation is rarely observed with fewer than 20 cases reported in the English literature. Radiological spectrum of gallbladder involvement in Schistosomiasis is limited and poorly understood. The gallbladder findings in Schistosomiasis that are described in the literature include wall thickening, fibrosis, wall calcification, gallstones, reduced fasting volume, and external wall protuberances [2,7]. Sonological finding of Schistosomiasis as polypoid lesion as in our case has never been reported before in the English literature.

Although, gallbladder schistosomiasis is extremely rare and Nepal is not endemic for Schistosomiasis; a very high index of suspicion should be made when individuals hailing from or having history of travel to endemic region present with gallbladder pathologies on routine radiological investigations.



**Fig. 2 – (a)** Photomicrograph showing numerous “egg –granulomas” embedded in the lamina propria and muscular layer (original magnification  $\times 40$ ) H & E stain. **(b)** Photomicrograph showing wall of gallbladder with papillary infoldings lined by tall columnar epithelium with focal areas of antral metaplasia. Egg-granuloma is also noted in the center (original magnification  $\times 40$ ), H & E stain. **(c)** Photomicrograph showing two oval transparent membranous sheath resembling shell of parasitic eggs surrounded by granulomatous reaction “pseudotubercle.” Multinucleated foreign body giant cells are also noted (Original magnification  $\times 100$ ), H & E stain. **(d)** Photomicrograph shows gallbladder wall with replacement fibrosis and mild lymphocytic infiltrate in the lamina and muscular layer. The perimuscular layer appears fibrosed with dilated and congested vasculature with one pseudotubercle (blue arrow), (Original magnification  $\times 25$ ), H & E stain. (Color version available online.)

### Declarations

Ethics approval and consent to participate: Institutional review committee (IRC) of Nepalgunj Medical College and Teaching Hospital waived requirement for approval.

### Consent for publications

Patient’s parents provided their informed consent for the publication of this case report.

### Availability of data and material

Not applicable.

### REFERENCES

- [1] Chitsulo L, Engels D, Montresor A, Savioli L. The global status of schistosomiasis and its control. *Acta Trop* 2000;77(1):41–51.
- [2] Majrashi SA, Al Amodi OM. Schistosomiasis as a cause of acute cholecystitis. *Saudi Med J* 2018;39(7):725–8.

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- [3] Nelwan ML. Schistosomiasis: life cycle, diagnosis, and control. *Curr Ther Res Clin Exp* 2019;91:5–9.
- [4] Elliott DE. Schistosomiasis. Pathophysiology, diagnosis, and treatment. *Gastroenterol Clin North Am* 1996;25(3):599–625.
- [5] Ghimire P, Wu GY, Zhu L. Atypical clinico-radiological presentation of hepatic schistosomiasis as pseudotumor and pyogenic abscess. Two case reports. *Eur J Radiol Extra* 2011;78(3):e125–e1e7.
- [6] Andoh H, Yasui O, Kurokawa T, Sato T. Cholangiocarcinoma coincident with schistosomiasis japonica. *J Gastroenterol* 2004;39(1):64–8.
- [7] Richter J, Azoulay D, Dong Y, Holtfreter MC, Akpata R, Calderaro J, et al. Ultrasonography of gallbladder abnormalities due to schistosomiasis. *Parasitol Res* 2016;115(8):2917–24.