

Case Study

Primary Ovarian Hydatid cyst: a rare encounter causing diagnostic dilemma

ABSTRACT

Hydatid cyst is a disease caused by inoculation of larval form of *Echinococcus granulosus* in human organs. Human is the intermediate host whereas dog is the definitive host. Most common site of involvement is liver (60-70%) followed by lung (25%). Female reproductive system is the least common site of occurrence. Most of them are secondary to infection in liver or peritoneal rupture. Primary hydatid disease in ovary is very rare constituting less than 0.5% of all hydatid disease. We present a case of primary ovarian hydatid cyst in 48 years old female who was provisionally diagnosed as ovarian tumour; however, hydatid cyst of ovary was diagnosed incidentally during histopathological examination.

Key words- hydatid cyst, *Echinococcus granulosus*, ovary

INTRODUCTION

Hydatid cyst is a zoonosis caused by a tape worm *Echinococcus granulosus*. It is endemic in Mediterranean region, South America, Middle East and East Africa.¹ Hydatid cysts are mostly found in liver (63%), lung (25%), muscle (5%), bones (3%), kidney (2%), brain (1%) and spleen (1%). It is rare in pelvis (0.2-2.25%).² Hydatid cyst in organ other than liver is usually asymptomatic unless cyst enlarges and causes pressure effect.³ Primary ovarian

20 hydatid cyst is rarely reported in articles and mistaken clinically as ovarian tumor. We
21 presented here a case of primary hydatid cyst of left ovary.

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23 **PRESENTATION OF CASE**

24 A 48 years old female patient presented with gradually enlarging swelling in lower abdomen
25 for last 2 years associated with pain. On abdominal palpation, mass was 20 weeks of
26 gestational age in size, with restricted mobility. Peripheral blood examination showed mild
27 leucocytosis (13700/cmm) with eosinophilia (15%). Ultrasonography showed unilocular cyst,
28 measuring 96x74x51mm with internal debris, in the pelvis. Left ovary could not be visualised
29 separately. Liver, kidney, spleen showed normal echopattern. No free fluid was detected in
30 abdomen. CA125 level was not raised. Liver function tests were within normal limit.
31 Preoperative diagnosis of benign ovarian cyst was made. Left salpingo-oophorectomy was
32 done and intact specimen was sent for histopathological examination. Grossly, tissue
33 composed of ovary with attached cyst, altogether measuring 9x7x4cm. Attached fallopian
34 tube measures 3 cm in length. On cut section it was a thick wall cyst containing mucoid fluid
35 with vesicular structures attached in the inner wall (figure 1). Microscopic examination
36 revealed an ovarian cyst lined by thick laminated eosinophilic cuticular layer with scolex.
37 Adjacent ovarian tissue showed features of fibrosis, inflammation and giant cell reaction
38 (figure 2 and 3). Histopathological features confirmed the diagnosis of hydatid cyst of ovary.

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40 **DISCUSSION**

41 Primary echinococcosis is very rare disease in female reproductive system (0.5%).⁴ Dog, fox,
42 carnivorous are the definitive host and sheep is the intermediate host. Human is the accidental
43 intermediate host who acquires infection by ingestion off eggs released in faeces of definitive

44 host. In duodenum hexacanth embryo hatch out of eggs, penetrates mesenteric vessels and
45 carried to liver, lung or other organs by hematogenous route.⁵

46 Most of the patients present with menorrhagia, pain, obstructed labour, lump in abdomen,
47 infertility and retention of urine.⁶ Ultrasonography and CT scan are frequently used for
48 diagnosis. Ultrasonography is cost effective in diagnosing hydatid cyst but less accurate than
49 CT scan which has 90% sensitivity.⁷

50 It is usually confused with other benign lesions of ovary, like benign ovarian tumor,
51 haemorrhagic ovarian cyst, uterine myoma because of nonspecific clinical features and
52 associated atypical radiological findings.⁸ Serological tests like immunoglobulin G antibody
53 detection by ELISA and indirect hemagglutination tests are also used which have 85%
54 sensitivity.⁹ Though FNAC is considered to be effective in diagnosing hydatid cyst, risk of
55 spillage obviates its need.¹⁰ In our case, as it was suspicious of ovarian neoplasm, FNAC was
56 not done.

57 Surgical treatment is preferable, which may be either radical or conservative. Total
58 cystectomy is the gold standard technique.¹ Most common complications are anaphylactic
59 reaction due to cyst rupture and secondary infection which can be reduced by pretreatment
60 with albendazole and mebendazole which sterilizes daughter cysts. After surgery, recurrence
61 rate is only 2%.¹¹ Histopathological findings are confirmatory of diagnosis.

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63 CONCLUSION

64 Though the incidence of hydatid disease in ovary is very low, clinicians should keep high
65 index of suspicion when dealing with cystic lesion of ovary as during FNAC or surgery
66 intraperitoneal spillage may cause dissemination or anaphylactic reaction deteriorating the
67 prognosis.

68 **CONSENT**

69 All authors declare that ‘written informed consent was obtained from the patient (or other
70 approved parties) for publication of this case report and accompanying images.
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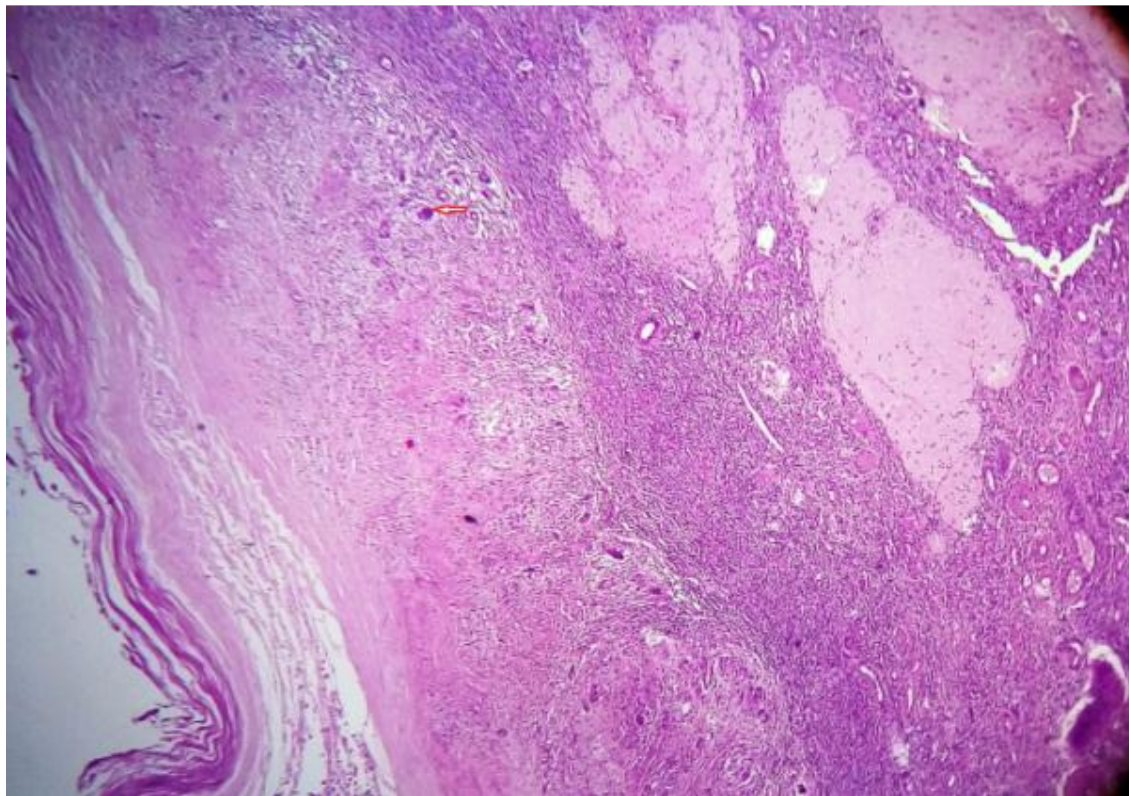
101 **Figure 1:** photograph of surgical specimen of ovarian hydatid cyst with daughter cysts.

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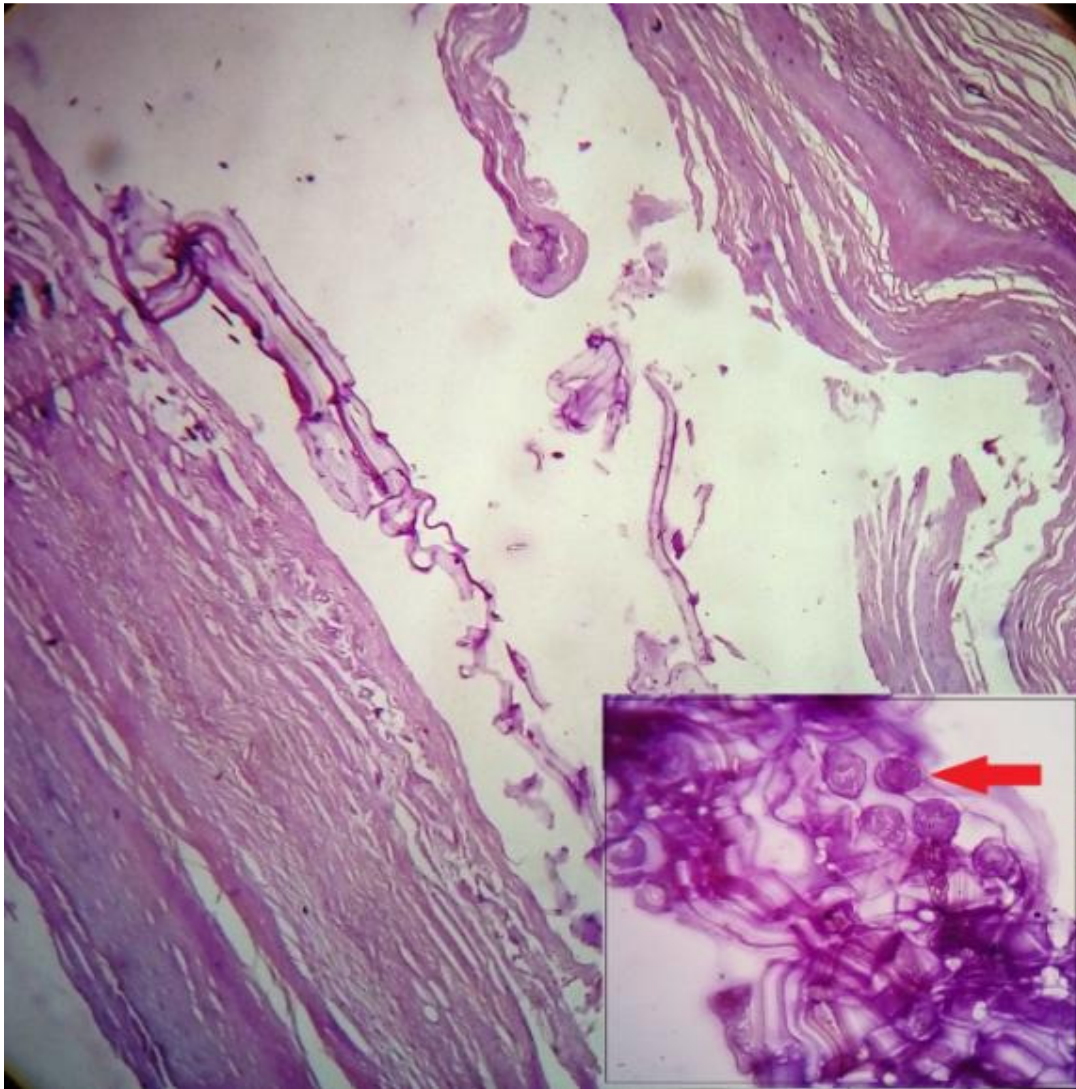


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108 **Figure 2:** Photomicrograph shows an ovarian hydatid cyst with ectocyst and giant cell
 109 reaction in the ovarian stroma (H&E,mag x100).

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113 **Figure 3:** Photomicrograph of inner endocyst and outer ectocyst of hydatid cyst (H&E, mag

114 x100). Inset shows photomicrograph of laminated cuticular layer and scolices (red

115 arrow),(H&E, mag x400).

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