Hydatid Cyst Mimicking as Ovarian Tumor

SUMITRA YADAV*, HK KANSAL†, ANITA SINGH‡, SANJAY PATIDAR‡

ABSTRACT

Hydatid disease remains endemic in various parts of the world due to the close association that exists between sheep, dogs and humans. Humans are the accidental intermediary hosts in the biologic cycle of the *Echinococcus granulosus*, which is the most frequent hydatidosis in the environment. USG and CT are both excellent imaging modalities for the detection of hydatid cysts. CT provides 3-D view and delineates the cyst, which is useful when diagnosis is uncertain, or when rupture or infection has occurred.

Keywords: Hydatid disease, abdominal lump, adnexal mass

Hydatid disease is a cyclozoonosis in which humans are accidental intermediary hosts in the biologic cycle of *Echinococcus granulosus*, the most frequent etiologic agent for hydatidosis. It usually involves the liver (75%), lungs (5-15%) and other organs in the body such as the spleen, brain, heart, kidneys and ovary (10-20%). Hydatid disease evokes much interest not only for the diversity of the anatomical and clinical forms it produces but also for the problems of diagnosis and therapy it creates, particularly when located at unusual sites.

CASE REPORT

A 70-year-old lady presented with a history of abdominal lump since 1-2 years, which was gradually increasing in size. Patient had persistent dull-aching pain abdomen. Initially the size of the lump was 3-4 × 4 cm in right iliac fossa; now it was 10 × 8 cm. It was associated with history of loss of appetite and weight loss. Patient also had history of constipation on and off for which she used to take medication (i.e. laxative) sometimes. There was no history of cough, vomiting, jaundice, malena, hemoptysis and hematemesis. She was P_2L_2; married for 50 years and menopausal since 20 years. Physical examination revealed severe general cachexia (weight 30 kg) and a large mass (10 × 8 × 6 cm size) arising from pelvis on right side of abdomen. The mass was dull on percussion without any fluid thrill or shifting dullness, it appeared solid to cystic in consistency with ill-defined margins. There was no hepatosplenomegaly and lymphadenopathy. Further investigations were done to find out the exact extent and nature of disease.

Laboratory investigations: Hemoglobin (Hb) 7 g/dL; total and differential leukocyte counts were normal; renal and liver function tests were also normal; sputum for acid-fast bacilli (AFB) was negative; CA-125 - 50 IU/mL.

USG of abdomen and pelvis: Normal liver, echogenic mass in the spleen of size 2.5 cm. An adnexal mass was seen on the right side, which was cystic in consistency, size 12.3 × 10.3 cm with septations, solid component seen posterior to urinary bladder in pelvis; uterus/ovary not visualized.

Magnetic resonance imaging (MRI) of whole abdomen and pelvis showed an 8.4 × 5 cm sized right adnexal mass, which appeared heterogeneously hyperintense on T_2 and hypo on T_1 images. It appeared well-marginated and revealed dense calcification. A predominantly cystic lesion in the left adnexae measuring 9 × 9 cm displacing the uterus to the right was also seen. It revealed multiple nodular mural components as well as multiple septae and locules within. No evidence of T_1 hyperintensity was seen to suggest fat/hemorrhagic products. Rim calcification was seen. The fat planes appeared well-preserved and

*Associate Professor and Unit Head
†Senior Resident
‡Residents
Dept. of Obstetrics and Gynecology
MGM Medical College and MYH Hospital, Indore (MP)
Address for correspondence
Dr Sumitra Yadav
30, Nayapura, Aerodrome Road
Indore - 452 005, MP
E-mail:drsumitrayadav@yahoo.co.in, asas20asas@gmail.com

the bowel loops were displaced; the urinary bladder appeared displaced anteriorly and Foley's catheter was seen *in situ*. Intervening fat planes were preserved. No significant pelvic lymphadenopathy or free fluid was seen. Ureters were not dilated. The liver was normal in size and density - no focal lesion was seen. The gallbladder, biliary tree and pancreas were normal. The portal vein, splenic vein and spleen were normal. There was focal hyperintense lesion with hypointense smooth uniform rim seen in the splenic parenchyma measuring approximately 4.4 × 3.2 cm. Calcifications were seen in the both adrenals; kidneys were normal except for a simple cyst in upper pole of left kidney. No retroperitoneal lymphadenopathy was seen. The bowel loops were normal.

Outcome

The patient was taken for exploratory laparotomy after transfusing 2 units of blood, with 1 unit blood in hand. Intraoperatively, the bowel loops were found to be adherent to the underlying mass. Blunt dissection done and uterus could not be easily identifiable. That mass appeared as caseous material. Dissection was completed taking due precautions. There were dense adhesions and on left side of ovary there were daughter hydatid cysts, 6-7 in number and sized 4-5 cm size. Pericyst and daughter cysts (Figs. 1 and 2) were removed with some difficulty. Betadine washing was done. Samples were collected from both sides for histopathology. A drain was kept in the pelvic area.

Histopathology Report

Material for examination: Left ovarian cyst, right ovarian caseous material (Fig. 3).

Microscopic: Hematoxylin and eosin (H&E) stained sections studied from ovarian tissue show cyst wall comprising of acellular eosinophilic laminated material. Brood capsule and scolices were also appreciated. Features were suggestive of hydatid cyst ovary.

DISCUSSION

Hydatid disease remains endemic in various parts of the world due to the close association that exists between sheep, dogs and humans. Humans become infected by accidental ingestion of food or water contaminated by tapeworm eggs. Humans are the accidental intermediary hosts in the biologic cycle of the *E. granulosus*, which is the most frequent hydatidosis in the environment. After ingestion, the eggs pass into the small bowel, where they hatch and are absorbed. The parasites then travel through the bloodstream and eventually establish cystic lesions in various organs. The liver is the most likely organ to be involved through portal drainage, but any organ may be infected. Each cystic lesion contains fluid and multiple secondary daughter cysts. The development of the parasitic larval stage in the organs of the host manifests in the form of cysts (hydatids). A typical hydatid cyst consists of three

Figure 1. Pericyst (Hydatid cyst material) in right-sided ovary.

Figure 2. Left ovarian cysts.

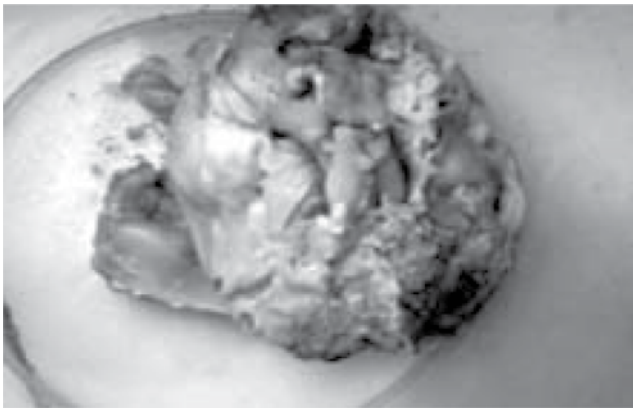

Figure 3. Caseous material in right-sided ovarian tissue.

layers:[1] Pericyst, ectocyst and endocyst. Complications are seen in one-third of cases.

The most common complication is rupture of cyst, which may result in anaphylactic shock and formation of localized or generalized secondary-echinococcosis.[2] Fever with chills and rigors can occur if the cyst is secondarily infected. Jaundice, biliary colic and urticaria will develop if there is an intrabiliary rupture of the cyst.[3] Intrathoracic rupture may lead to shoulder pain and phlegmatic cough containing blood and bile.[4] Ultrasonography (USG) and computed tomography (CT) are both excellent imaging modalities for the detection of hydatid cysts. However, USG is less accurate in localizing and delineating the extent of the cyst though it's cost-effective. The sensitivity of CT scan is 90-100%.[5] It provides 3-D view and delineates the cyst, which is useful when diagnosis is uncertain or when rupture or infection has occurred.[6]

The World Health Organization (WHO) has outlined the treatment guidelines for hydatid cysts. Surgery is the treatment of choice for all patients with symptomatic disease and who are fit for surgery.[7]

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