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Case Report

## Primary pelvic hydatid cyst: a rare case report

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### ABSTRACT

Primary pelvic hydatid cyst disease is a zoonotic parasitic disease most frequently caused by *Echinococcus granulosus* or *Echinococcus multilocularis*. Primary pelvic hydatid cyst is a rare entity. A 39-year-old, para 3 living 3 presented to casualty with acute pain abdomen and a suprapubic mass. Patient gave history of acute lower abdominal pain since 4 days associated with vomiting. On examination, a palpable mass around 18 weeks size, firm to hard in consistency with ill-defined margins and restricted mobility and suprapubic tenderness. Lower limit could not be reached, extending from right iliac fossa to midline. Per vaginum findings suggestive of mass deviated to right side with fullness in right fornix. No cervical motion tenderness. The pre-operative tumor marker levels were as follows: CA125=12.44 U/mL (normal=0-35), CEA=0.09 ng/mL (normal=0-2.5). CA19.9=16.79 U/mL (normal=1.2-30). Erythrocyte sedimentation rate (ESR) was found to be 82 mm in the first hour. Transabdominal ultrasound suggestive of adnexal mass? ovarian with moderate ascites. Urinary bladder seen separately. Contrast enhanced computed topography (CECT) suggestive of complicated right para-ovarian /ovarian cystic mass like cystadenoma. Exploratory laparotomy was done and specimen (uterus, cervix, omental biopsy and peritoneal washings) was sent for Histopathological report. Histopathological examination of the haematoxylin and eosin-stained section revealed ruptured brood capsule releasing daughter cyst. Post-operative period was uneventful. Patient received full course of anti-helminthic treatment.

**Keywords:** *Echinococcus granulosus*, Hydatid cyst, Primary pelvic hydatid, Zoonotic parasitic disease

### INTRODUCTION

Hydatid cyst or *Echinococcosis* is a parasitic infection caused by the larval stage of the cestode *Echinococcus*, especially the genus *Echinococcus granulosus*. Generally, the worm maintains a dog-sheep cycle, and, occasionally, humans become the intermediate host.<sup>1</sup> This infection is very frequent in some regions of the world such in the Mediterranean area, East Europe, South America, Middle East, East Africa and Australia.<sup>2</sup> In Italy it is still endemic with an incidence of approximately 4 cases/100,000/year.<sup>3</sup> Although any organ may get infected, primary involvement of the pelvic cavity is very rare.<sup>4</sup> In 80% of cases reported with a cyst in this location, the ovary is the most common affected organ followed by the uterus.<sup>5,6</sup>

Authors report an unusual case of hydatid cysts of the pelvis involving the ovary in a premenopausal woman, which mimicked benign ovarian neoplasm.<sup>1</sup>

### CASE REPORT

A 39-year-old, para 3 living 3 from a rural area of Madhya Pradesh presented to casualty with acute abdominal pain and a suprapubic mass with insidious onset of lower abdominal pain and mass since four years. She belongs to low socioeconomic class and is a housewife with no history of living in close association with cattle. Patient gave history of acute lower abdominal pain since four days associated with vomiting. No history of abnormal vaginal bleeding, weight loss, fever or alteration of bladder and bowel habits. The patient had

regular menstrual cycle of 28-day interval and her Last menstrual period was 8 days back. She had two term vaginal deliveries (uneventful). The gynecological history was otherwise unremarkable. Patient gave history of per abdominal mass since 4 years with similar complaints for which she received conservative management in a peripheral hospital (no documentations available).

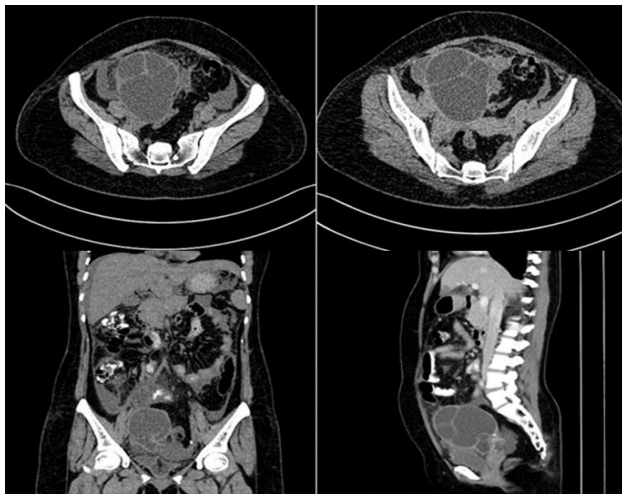
On clinical examination- no pallor, lymphadenopathy, icterus or edema with stable vitals.

### Local examination

Per abdomen findings showed a mass palpable around 18 weeks in size, firm to hard in consistency with ill-defined margins and restricted mobility and suprapubic tenderness. Lower limit could not be reached, extending from right iliac fossa to midline.

Per vaginum findings suggestive of mass deviated to right side with fullness in right fornix. No cervical motion tenderness.

Per rectal findings had vague fullness in pouch of Douglas and rectal mucus membranes were free.



**Figure 1: Axial and coronal views of contrast enhanced computed tomography of the abdomen showing a well-defined smooth-walled (maximum wall thickness approximately cystic lesion of 94x88 mm in the pelvis.**

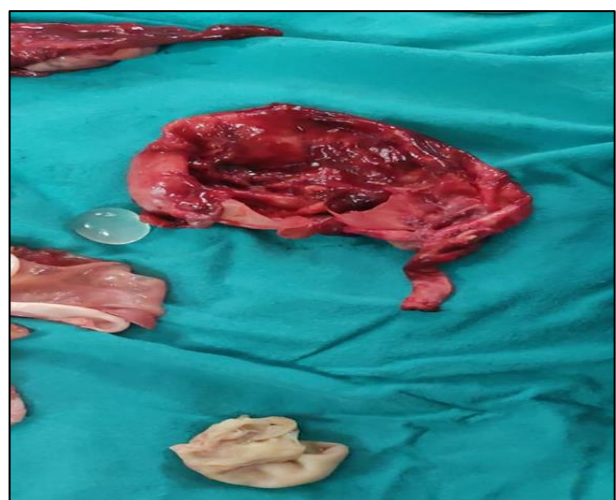
Liver enzymes, other biochemical and hematologic parameters were within normal limits. Erythrocyte sedimentation rate was found to be 82 mm in the first hour. The pre-operative tumor markers (i.e. CA125, beta HCG, alpha-fetoprotein levels were normal), CA125=12.44 U/mL (normal=0-35), CEA=0.09 ng/mL (normal=0-2.5 ng/ml), CA19.9=16.79 U/mL (normal=1.2-30). Trans-abdominal ultrasound suggestive of adnexal mass? ovarian with moderate ascites. Urinary bladder seen separate from the mass. CECT abdomen reveals bulky low attenuation multiloculated complex

cystic lesion in right iliac fossa extending across midline 9.4x8.8 cm, abutting the uterus, right ovary, rectum, external/internal iliac vessels (luminal narrowing seen) and right uterine artery, with thin enhancing wall and multiple internal septations in the right iliac fossa. Moderate ascites and mild pleural effusion. CECT report suggestive of complicated right para-ovarian /ovarian cystic mass like cystadenoma (Figure 1).

Exploratory laparotomy done and specimen (uterus, cervix, omental biopsy and peritoneal washings) was sent for histopathology report. Intra-operative findings - 10x8 cm large ovarian cystic lesion arising from right adnexa, adherent to omentum and anterior abdominal wall. Another ruptured cyst wall adherent to anterior uterine wall on right side and densely adherent to bladder. Omental sampling taken, peritoneal biopsy taken from right and left paracolic gutters (Figure 2, 3).



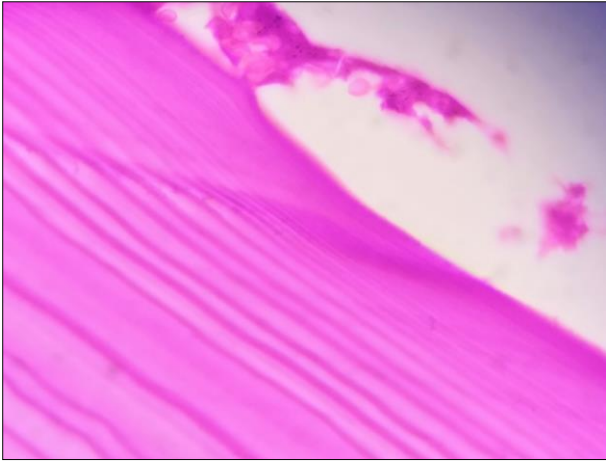
**Figure 2: Specimen of uterus, cervix, fallopian tube with daughter cysts.**



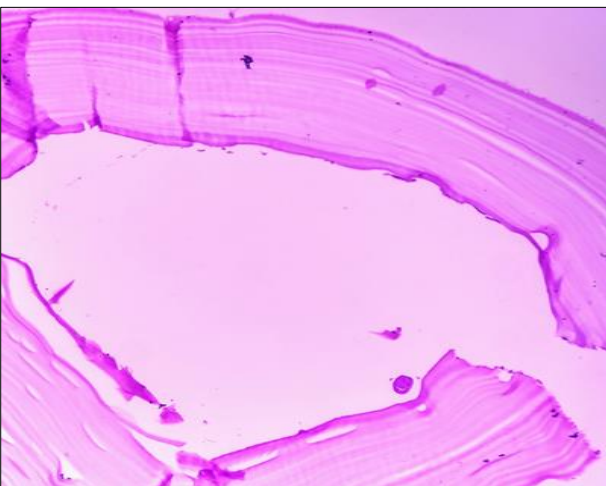
**Figure 3: Ovarian cyst with daughter cells.**

No hypotension during surgery. Post-operative period was uneventful. Patient received full course of anti-helminthic treatment. Histopathological examination of

the hematoxylin and eosin-stained section revealed ruptured brood capsule releasing daughter cyst suggestive of pelvic hydatid cyst (Figure 4 and 5).



**Figure 4: Histopathology report of pelvic hydatid cyst.**



**Figure 5: Histopathology of the wall of the daughter cysts.**

## DISCUSSION

*Echinococcus granulosus* completes its life cycle in dogs (definitive host) and goats, sheep, pigs or cattle as intermediate hosts. Humans are accidental hosts infected following ingestion of the eggs excreted through the feces of the definitive hosts. The eggs as oncospheres, penetrate the intestinal wall and spread via blood and lymphatic circulation to different organs where they grow to form hydatid cysts. It takes approximately 5-20 years for the cyst to enlarge and become symptomatic.<sup>1</sup>

Pelvic hydatidosis presents with vague abdominal pain due to swelling, irritation, menstrual abnormalities, infertility, pressure symptoms over adjacent organs like bladder and rectum and sometimes even obstructed labor.<sup>7</sup> Preoperative diagnosis can be established by

imaging modalities such as USG/MRI/CT where features such as a multilocular cyst, cystic wall calcification, fluid levels from hydatid sand and water lily signs are seen. Pre-operative antihelminthic therapy along with surgery is the preferred treatment. Partial cystectomy is another modality when surrounding adhesions cause problems or removal of ectocyst is dangerous.

Low public awareness about the fact that ingestion of contaminated food spreads the disease, is one of the most important factors causing the transmission of infection in endemic areas of India.<sup>5</sup> There are several other risk factors, such as rural area, poor economic condition, and low education level-all of which were present in our case. There was no history of farming or close association with dogs and cattle.

Therefore, cystic echinococcosis was not initially considered as a possible differential diagnosis. Peritoneal hydatid cysts, secondary to rupture from other organs, occurs in 13% of cases; however, primary peritoneal hydatid cysts are very rare.<sup>1,8</sup> Pelvic echinococcosis may resemble malignancy and a mimic multicystic ovarian neoplasm.<sup>9</sup> Hence, primary pelvic and ovarian hydatid cysts should be kept in mind while evaluating a case of pelvic cystic space occupying lesion.

Pre-operative suspicion, proper intra-operative dissection, and postoperative follow-up may eliminate the morbidity and mortality associated with the condition. Awareness regarding echinococcosis as a case of peritoneal lesion especially in endemic zones will avoid diagnostic difficulties and most potentially serious complications.

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