

Ovarian Hydatid Cyst as a unique cause for obstructed labor: Case Report

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Introduction

Hydatid disease is caused by *Echinococcus granulosus* (dog tapeworm), which lives in the intestinal tract of primary hosts such as dogs and other carnivorous animals, found in all sheep-raising countries. Humans are accidental intermediate hosts; transmission to humans occurs by direct contact with the primary host or by ingesting eggs from water and food sources⁽¹⁾.

Hydatid cysts occur most frequently in the liver (63%), followed by the lungs (25%), muscles (5%), and bones (5%). No organ of the body is immune. Various studies have reported a very low prevalence of hydatid cysts in ovaries, ranging from 0.4 to 0.6%⁽²⁾, the majority of cases being secondary involvement. Very few cases of primary hydatid cyst of the ovary have been reported in the literature^(3,4). The incidence of hydatid disease in pregnancy is very rare, ranging from 1/20,000 to 1/30,000. There are only a few reports of obstructed labor caused by pelvic hydatid cyst^(5,6). With this background, we are reporting a unique case of a large ovarian cyst obstructing the labor, where an emergency cesarean operation was done, wherein the cyst was observed to be a hydatid cyst.

Case report

A 30-year-old unbooked patient, G₃P₂L₂, with two previous full-term normal deliveries, was referred from an adjacent district hospital to our secondary care District Women Hospital as a case of term pregnancy with obstructed labor. The obstetric sonography report done at 27.4 weeks showed a singleton pregnancy, with mix echoic adnexal mass possibly ovarian cyst of size 19.5 cm×16 cm×9.5 cm possibly simple ovarian cyst. She had to travel almost 220 KM distance to seek definitive care.

At the time of admission, she was exhausted, with a pulse rate of 102 beats per minute and a blood pressure of 110/70 mm Hg. She had mild anemia with no pedal edema or icterus. Her cardiovascular and respiratory systems were normal on examination. Abdominal examination revealed a uterus of term size deviated to the left side, the longitudinal lie of a fetus, cephalic presentation with a distended bladder, and stretched lower uterine segment with fetal tachycardia. Per

vaginal examination, the cervix was 6 cm dilated, fully effaced, membranes absent with scanty liquor draining, and vertex at 0 station with moderate caput with the adequate pelvis. The antenatal period had been uneventful and the patient received antenatal care elsewhere at the general practitioner thrice. The patient was from a migratory population and used to reside at farms for daily wages. Every 2-3 months, she used to move from one village to another to earn.



Figure 1: Cyst plastered to the uterus



Figure 2: Dilated ureter because of large cyst compression observed during dissection

The patient was admitted to the labor room, and baseline investigations like complete blood count (reported Hb 8.6 gm%, TLC 7200) and blood group was done. Other blood tests like liver function and kidney function tests were also advised. In view of obstructed labor, the patient was taken for an emergency cesarean section with a due arrangement of two units of blood crossmatched. Written consent was taken from the patient.

Case Report

A vertical incision was given on the abdomen in view of the large mass. The baby was delivered by the Patwardhan method, which required resuscitation and special newborn care unit admission. Placenta and membranes were delivered, and the uterus was closed. A big cystic mass was noted on the right side, which was pushing the uterus to the left side (Fig. 1). Mass was adherent to the uterus and colon and could not be exteriorized, so the incision was extended. The right ovary tube was normal, but it was left ovarian mass enlarged, which was shifted to the right. Meanwhile, the uterus was found not maintaining good tone and was bleeding, so bilateral internal iliac ligation was done. During dissection, the left ureter was found dilated, adherent to the left side of (Fig. 2); we were lucky to avoid accidental injury to the ureter. Intraoperative findings were informed to relatives about adherent mass and atonic uterus and the decision of hysterectomy. Written consent was obtained. Large cystic mass of $20 \times 15 \times 10$ cm along with uterus and cervix



Figure 3: Solitary omental hydatid cyst



Figure 4: Multiple daughter cysts in a cut section of ovarian cyst

removed by performing total hysterectomy with left salpingo-oophorectomy. Right ovary was preserved.

Grossly the mass was cystic with a thick wall, pearly white color, filled with fluid (Fig. 3). The cut section showed clear fluid with multiple daughter cysts measuring 1-2 cm (Fig. 4). Clinical diagnosis of ovarian hydatid cyst was made intraoperatively. Due precaution was taken by administering injection chlorpheniramine maleate 25 mg and hydrocortisone 100 mg for anaphylaxis. Absence of any more

cysts by exploring the whole abdominal cavity was ensured. However, the same solitary type of omental cyst of size $6 \times 6 \times 3$ cm, was there which was removed. Peritoneal lavage was given with povidone-iodine, and the drain was kept. The post-operative period was uneventful. Two units of blood were given. Antibiotics ceftriaxone and metronidazole, and hydrocortisone continued for five days eight hourly. The histopathology report was suggestive of a hydatid cyst⁽⁷⁾.

Tab albendazole 400 mg was given twice daily for four weeks⁽⁷⁾. Liver and kidney function tests were repeated weekly. The drain was removed on day three, and the sutures were removed on day eight. Subsequently, a chest X-ray, USG abdomen, and CT scan of the chest and cranium were done. No evidence of any cyst or primary focus was noted. The patient was discharged with the baby in good condition on day 30 and advising tablet albendazole for two months more and follow-up after 15 days. But the patient was lost to follow up.

Discussion

The literature has reported a few cases of hydatid disease in pregnancy localized in pelvic areas. Female pelvic organ involvement is rare and almost always secondary to rupture into the peritoneal cavity of a primary cyst elsewhere. Primary echinococcosis occurs when the genital organs are the primary site of involvement via the bloodstream, and in such cases, the disease is exclusively confined to the genital organs^(5,7). In our case, we were not sure whether it was primary or secondary as we could find lesions in the ovary as well as the omentum but not in other common organs. There are no specific symptoms of pelvic hydatid disease, and in many cases detected incidentally by imaging studies. Obstetric problems complicating the hydatid disease are abdominal pain, dystocia, obstruction of labor, uterine rupture, and anaphylactic shock when the cyst ruptures during the second stage of labor. Because of this, some authors advise planned cesarean delivery^(4,6,8).

Our patient presented with obstructed labor. In our case, we found ovarian and solitary omental hydatid cyst. Parasite should pass the liver filter followed by the lung filter before reaching atypical body areas, or the cyst could have lymphatic distribution if the liver and lungs are spared. Most of these cases are related to previous surgery for hepatic disease. In our case, there was no involvement of the liver, spleen, or lungs and no past surgery, so the possibility of hematogenous or lymphatic spread or a rare possibility of primary echinococcosis of the ovary and omentum cannot be ruled out. It is difficult to preoperatively define the disease, and missing a preoperative diagnosis is possible. So, this entity should be kept in mind as one of the differential diagnoses.

The diagnosis is made by a set of diagnostic methods, including imaging, scanning, and laboratory and serologic diagnostic tests [Enzyme-linked Immunosorbent Assay (ELISA), indirect of hemagglutination test]. A definitive diagnosis can only be made with histological demonstration. Large hydatid cysts detected during pregnancy should be removed, preferably in the first half of pregnancy⁽⁴⁾. Rupture of cyst is common if the size is more than 10 cm, superficial, and at a young age. The rate of rupture is 16 to 25%, and the rate of severe reaction is 1 to 12.5%. Sudden death or immediate post operative is reported^(2,9). During delivery pharmacological measures are taken for prophylaxis against anaphylaxis in case of ruptures⁽⁹⁾. In our case we were fortunate that the labor had not caused a rupture of the cyst. When a pelvic cyst causes obstructed labor, a cesarean section is performed.

Conclusion

In conclusion, a gynecologist should be aware of the disease due to the rare occurrence of this condition; it is very likely that hydatid disease may not be considered a differential diagnosis. But in our case, as she was living at farms and used to migrate frequently, a strong suspicion of the possibility of the ovarian cyst being a hydatid cyst could have been made by the radiologist and the treating practitioner (at 27 weeks of gestation). As such types of patients are migrating from village to village, it is not easy to track them for follow-up, so we should not miss the opportunity of counseling them about the possibility of hydatid cyst and its complications, treatment plan, and long-term follow-up during antenatal checkups; instead of, that complications of rupture, anaphylaxis, obstruction of labor can be avoided by planning the delivery and surgery electively and prophylaxis of albendazole can be initiated after the first trimester.

Ethical consideration: Permission for publication of the case and photos was obtained from the patient and relatives at the time of surgery and hospital stay.

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