



A CASE SERIES OF HYDATID CYST AT UNUSAL AND USUAL SITES

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ABSTRACT

Hydatid cyst disease is a type of zoonotic disease that is caused by *Echinococcus granulosus*. The larval stage of the tapeworm is infective to humans. Dogs and foxes are the primary hosts; sheep and cattle act as intermediate hosts, while humans are the accidental hosts and represent the dead end of the life cycle of larvae. Hydatid disease can manifest anywhere in the body. In an endemic country like India, hydatid cyst disease should be kept in mind for the diagnosis of any cystic or solid lesion.

KEYWORDS : Hydatid, Echinococcus, Site

INTRODUCTION

Hydatid cyst disease is a zoonotic disease caused by the larval stage of *Echinococcus*. Humans are merely the worm's accidental hosts; they have no part in its biological cycle. It usually affects the lungs and liver. It is exceedingly uncommon in the female reproductive system and subcutaneous tissue, even though it is rarely known to occur in other body areas like muscles, the brain, bone, and the breast. Organ involvement may be primary or secondary to involvement of the liver or lungs.

MATERIALS AND METHODS

In our study, 15 cases of hydatid disease presenting with cysts or swelling at usual and unusual locations were found, namely the liver, lung, breast, skin, ovary, and peritoneum. One case was an incidental autopsy finding of a hydatid cyst in the liver.

RESULTS:

Case Studies

Case 1

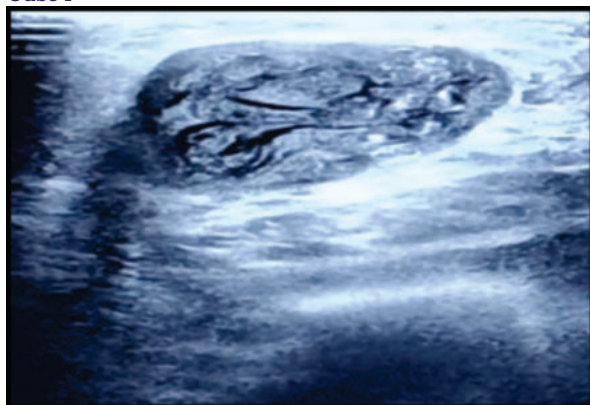


Fig 1 - Ultrasonography Showing Water Lily Sign (hydatid Cyst)

A 38-year-old female presented with a gradually progressive painless lump in the left breast for 4 years. Breast examination revealed a lump of size 3 x 3cm in the upper outer quadrant of the left breast, which was firm in consistency and freely mobile. She had no associated pain, nipple discharge, skin discoloration, fever, or family history of breast cancer. Also, no association with the menstrual cycle was noted. Nipple areola complex was normal with no axillary lymphadenopathy. The

contralateral breast and axilla were normal. FNAC was performed, and microscopy from smears of the breast aspirate showed acellular lamellated eosinophilic membrane fragments, scolices, and refractile hooklets against a proteinaceous background. The radiological examination done subsequently endorsed the cytodagnosis of a hydatid cyst of the breast and did not show involvement of any other organ. Subsequently, a lumpectomy was performed on the patient, and histopathological examination of the lumpectomy specimen confirmed the diagnosis.

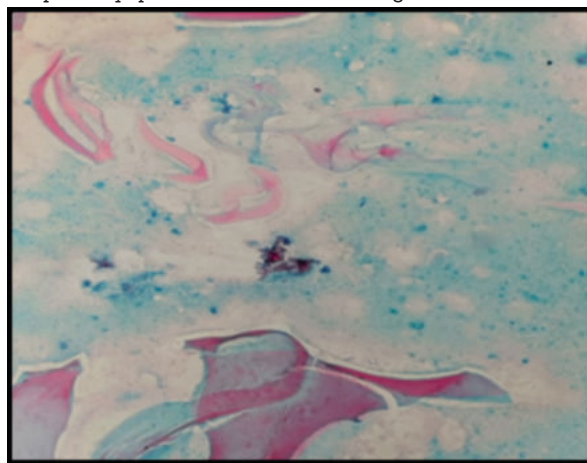


Fig 2- Multiple Scattered Hooklets (PAP stain, 40X)

Case 2,3

We reported two cases of primary ovarian hydatid cysts. The first patient was a 20-year-old unmarried girl complaining of pain in the abdomen, with USG suggesting a well-defined multi-cystic lesion measuring 10x9.4x9.1 cm swelling of benign etiology suggestive of either serous or mucinous cystadenoma in the left ovary. An exploratory laparotomy was performed for the patient, and the left ovary was sent to the histopathology section. Histopathological examination revealed acellularly laminated material along with the germinal layer. The diagnosis of this case was given as a hydatid cyst with chronic oophoritis of the left ovary.

The second patient was a 45-year-old female who underwent transvaginal hysterectomy with bilateral adnexa. The presence of a hydatid cyst in her right ovary was an incidental finding.

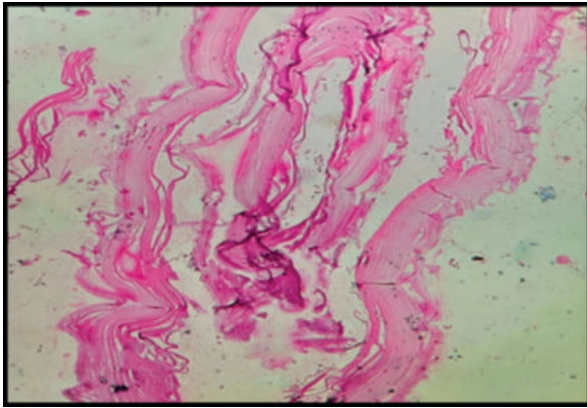


Fig 3- Photomicrograph Showing of Acellular Cyst (histopathology, H & E stain)

Case 4

This was a case of subcutaneous swelling in the thigh region in a 20-year-old female patient. She presented with a 2x2 cm swelling that was painless, non-tender, and had normal overlying skin. She underwent cyst excision with the impression of having an epidermoid cyst, and the sample was sent for histopathological examination. The diagnosis of primary cutaneous hydatid cyst was made after confirming no other primary at other sites. She was a resident of a rural area and had two pet dogs living with her.

Cases 5 And 6

Case 5 was a 54-year-old male patient who presented to the surgery department with complaints of intense abdominal pain. He underwent exploratory laparotomy, and hydatid cyst extraction from the peritoneal cavity was done. Cystectomy contents were sent for histopathological examination, which confirmed the diagnosis.

Case 6 was a 35-year-old female patient who had two cysts, one in the liver and the other in the lesser sac. Cyst removal was done by laparoscopic open cystectomy, and two containers with cyst contents were sent for histopathological examination, and the diagnosis was confirmed.

Case 7

A 60-year-old male patient presented to the outpatient department with complaints of a dry cough and a mild fever. The patient gave no history of weight loss, loss of appetite, Koch's history, or Koch's contact. A chest x-ray revealed a cystic lesion in the right lung measuring 3x4cm. A CT scan was done for the patient, which was suggestive of a hydatid cyst. The enucleation of the intact cyst was done and sent for the histopathological examination, which confirmed the diagnosis.



Fig 4- Gross Specimen Of Multiple Hydatid Cysts In Liver

Case 8 To Case 15 Liver-hydatid Cyst

Among the rest of the 8 patients, 5 were males and 3 were females. The youngest patient among these was a 24-year-old female with a hydatid cyst in the left lobe of the liver, which was suspected on USG, and the oldest patient was a 70-year-old female. One female patient had a hydatid cyst in the liver as well as a lesser sac. Among the 8 patients, one case was diagnosed on postmortem examination and confirmed on histopathological examination.

DISCUSSION

Hydatid cyst disease is a zoonotic disease caused by *Echinococcus granulosus*, belonging to the family of cestodes (tapeworms). There are two common genera: *Echinococcus granulosus* and *Echinococcus multilocularis*. The unilocular cyst is mainly caused by *Echinococcus granulosus*.¹ The definite hosts are dogs, foxes, and wolves, while the intermediate hosts are sheep, cattle, and horses.² Humans are the accidental host and do not play a role in the biological cycle of worms. When such contaminated food is consumed by humans, the ova hatch in the gastrointestinal tract. Through the portal circulation, the encased embryos are released in the duodenum and moved to the liver. The liver acts as the first filter in trapping the embryos, which then develop into hydatid cysts in 55–70% of cases, followed by the lungs as the second filter in 18–35% of cases. Some escape from these filters and develop in other organs. The incubation period is highly variable. The cyst grows at a rate of 0.3–1 cm/year and may take 5–20 years to attain sufficient size to cause symptoms.³ It is commonly found in the temperate zones of the world; endemic countries include India, Africa, Middle East countries, South America, New Zealand, and China, where sheep rearing is a common practice. India is an endemic country only because of the lack of access to clean, potable water supplies and the close association of people with domestic animals like sheep and dogs.⁴ The most common sites affected are the liver (63%) and the lung (25%), followed by muscles (15%), bones (3%), kidney (2%), spleen (1%), and other sites (1%).⁵

Breast can be a primary site or part of disseminated hydatidosis. A patient with a breast hydatid cyst presents with a painless breast lump, which might mimic fibroadenoma, phyllodes tumor, chronic abscesses, or even carcinoma. Therefore, breast hydatid cysts should be included in the differential diagnosis of breast lumps in endemic areas.⁶ A preoperative diagnosis can be made by FNAC, which is a safe procedure.⁷ Disease can also be diagnosed by radiologic and serologic means, both of which are not definitive.⁸

Pelvic hydatid disease as well as hydatid cysts of the ovary are uncommon sites, and the reported incidence lies in the range of 0.2–2.25%.^{9,9} The primary pelvic hydatid cyst's pathophysiology is not clearly established. There are theories that, in such cases, the hydatid embryo gains entry into the pelvic cavity by hematogenous or lymphatic route.¹⁰ The common sites of hydatid cysts in the female reproductive tract are the pouch of Douglas and the uterine cavity, but cysts arising from the ovary are extremely rare.¹¹ A hydatid cyst can mimic either polycystic disease or cancer, so it can be difficult to diagnose correctly because of the vague clinical symptoms that go along with unusual radiological and ultrasonographic findings that only reveal a benign ovarian cyst or a solid ovarian mass.¹²

It's still unclear how hydatid cysts initially localize themselves subcutaneously. The parasite larvae that are consumed break through the intestinal wall, enter the bloodstream, and travel to the liver through the portal vein. A small percentage may make it past the liver, which is referred to as the first filter, and onto the lung, which is referred to as the second filter, and eventually reach the systemic circulation. Dissemination

through lymphatic channels has also been suggested as a possible mechanism and may account for solitary cysts at uncommon site⁵.

Primary or secondary peritoneal hydatid cysts are an uncommon but noteworthy disease manifestation. Intraperitoneal hydatid cysts usually occur secondary to the rupture of a primary hepatic or splenic cyst¹³. Primary peritoneal echinococcosis accounts for 2% of all abdominal hydatidosis. The hydatid embryo gains access to the mesentery by hematogenous or lymphatic routes. Mesenteric hydatid cysts usually present as a non-specific mass. The patient complains of pain due to traction on the mesentery and pressure effects on adjacent organs. Sometimes, they can rupture spontaneously¹⁴.

The majority of lung hydatid cysts are silent and are either small or medium in size. Hydatid cysts that are not complicated are typically unintentionally found during routine chest X-rays performed for reasons other than chest diseases. The common presentations are compression symptoms such as a dry cough in cases of very large cysts; a productive cough in cases associated with communication with the bronchial tree; and chest pain and dyspnoea in the case of rupture to the pleural cavity^{15,16}.

CONCLUSION

Among the 15 cases, there were 8 female patients and 7 male patients. The liver is the most common site of hydatid cysts. Breast hydatid cysts should be included in the differential diagnosis of breast lumps in endemic areas. A preoperative diagnosis can be made by the FNAC. An ovarian hydatid cyst is a rare finding. On USG, it primarily looks like a solid ovarian mass or cystic ovarian disease. A high degree of suspicion, along with radiology, helps in diagnosis. Primary or secondary peritoneal hydatid cysts are an uncommon but noteworthy disease manifestation. The rupture of a primary hepatic or splenic cyst is typically the cause of intraperitoneal hydatid cysts. Primary hydatid cysts in the peritoneum are an uncommon site. Most patients with subcutaneous hydatid cysts complain of slow-growing, painless, mobile masses with normal overlying skin. Hydatid cysts are distinguished radiologically by thick cyst walls, calcification, daughter cysts, and a germinative membrane that is distinct from the cyst wall. The lungs are the second-most common location for hydatid cysts. Most hydatid cysts in the lungs are small to medium-sized, silent cysts. Hydatid cysts that are not complicated are typically found during routine chest X-rays performed for reasons other than chest diseases.

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