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Asymptomatic incidental primary pelvic hydatid cyst in a post-menopausal woman: A case report

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ABSTRACT

The liver and lungs are the two organs most commonly affected by the endemic illness known as hydatid disease. The most typical reason for peritoneal echinococcosis is when a hepatic hydatid cyst ruptures into the peritoneal cavity. A cyst in the pelvic cavity is only deemed main if there are no additional hydatid cysts anywhere else. Here, we describe a solitary pelvic hydatid cyst that manifested without affecting the lungs or any other internal organs. Our patient, a 50-year-old lady, was diagnosed with a thin-walled big cystic mass in the pelvic area by ultrasonography. Her main symptoms were dull aching discomfort around the umbilicus and umbilical hernia. The most likely first diagnosis for her operation was an isolated pelvic mass. Clinical examination and imaging study were done and incidentally diagnosed as a pelvic hydatid cyst disease with dense adhesion between the omentum, bladder and left ovary and left fallopian tube. A laparotomy was performed. The cyst was removed successfully from the surrounding adhesion on the surgical attempt without undue complication. There are no indications of a disease recurrence in the post-operative follow-up. Gynecologists and surgeons should be apprised of the potential for a single main hydatid cyst in the pelvic region and must consider this condition when establishing a differential diagnosis of a primary cystic pelvic mass.

Keywords: Lower back pain, *Echinococcus Granulosus*, Pelvic mass, Hydatid Cyst, Zoonosis

1. INTRODUCTION

Echinococcosis sometimes referred to as hydatid cyst or echinococcosis is a parasitic disease caused by the larval form of the zoonotic organism *Echinococcus granulosus* (Tsaroucha et al., 2005). Due to dogs having a definite role as hosts, the disease is prevalent globally but is more prevalent in regions of the world where sheep are raised. Three species cause hydatid disease. The most frequent strain is *Echinococcus granulosus*, with *Echinococcus multilocularis*

and *Echinococcus ligartus* accounting for a tiny proportion of cases. Though they can affect any organ, echinococcal cysts are most frequently noticed in the liver (60-70%) and lungs (10-25%) (Hamamci et al., 2004). Extra hepatic localization, which frequently affects the lungs, spleen, kidneys and pancreas, is documented in 14-19% of all instances of abdominal hydatid (Tsaroucha et al., 2005). Other documented involvements include the brain, heart, ovaries, bone and abdominal wall (Hamamci et al., 2004). Hydatid cysts in the isolated pelvis are highly uncommon and occasionally challenging to diagnose (Engin et al., 2000). Hydatid disease is a parasitic tapeworm disease caused by the larval stage of *Echinococcus granulosus* or *Echinococcus multilocularis*. However, these two Echinococcus species are very different, having distinct endemic locations and clinical symptoms. The more common species, *E. granulosus* tends to generate a characteristic big, solitary, round or oval, well-defined hydatid cyst. In contrast to *E. granulosus*, instead of a clearly defined expansile cyst, *E. multilocularisis* generates an uneven, tiny fluid-filled cavity or an invasive spongy mass that resembles an infiltrating malignant hepatic tumor (Yuan et al., 2005).

2. CASE REPORT

A 50 year old woman from a rural area presented in the general surgery outpatient department with a complaint of swelling around the umbilical region and mild lower abdominal pain for 2 years. She did not have any prior experience living close to cattle and was a housewife in a poor socioeconomic household. A detailed clinical examination was done and 3x2 cm reducible swelling with cough impulse present was found most likely an umbilical hernia. CT abdomen and pelvis revealed the most likely differential for the pelvic lesion is a hydatid cyst and less likely to be a lesion arising from the left ovary, with a small umbilical hernia containing fat as its content, right adrenal lesion most likely adenoma. Ultrasonography of the abdomen and pelvis revealed grade 1 fatty liver, adenomyosis and right ovarian complex cyst of size 8x6x4 cm with right hydrosalpinx. For detailed information, a contrast-enhanced computed tomography of the abdomen and pelvis region review was done and found that an 8.0x7.8x6.8 cm (APxMLxSI) sized well-defined round soft tissue density lesion was seen in the pelvis superior to the bladder, anterior to uterus. The left ovary is seen along the posterior aspect of the described lesion closely abutting the lesion. This lesion shows multiple peripherally arranged fluid-filled spaces and no post-contrast enhancement, margins of this lesion are well-circumscribed, small soft central calcific foci are seen with in, most likely differential for the pelvic lesion is a hydatid cyst and less likely to be a lesion arising from the left ovary (Figure 1, 2).

Figure 1 Axial cuts of contrast-enhanced computed tomography showing a pelvic mass-pelvic hydatid cyst

After clinical and radiological examination patient was planned for exploratory laparotomy. Intra operatively a cystic mass of (8x6cm) of pelvic origin was found and the cyst wall was adherent with omentum, bladder, left ovary and left fallopian tube. Cyst wall separated successfully from surrounding adhesion and excised. External abdominal draining was done after performing a thorough saline peritoneal lavage. Scolicidal agents were also used to prevent any recurrence. The specimen shows gross features of the Echinococcus cyst (Figure 3).

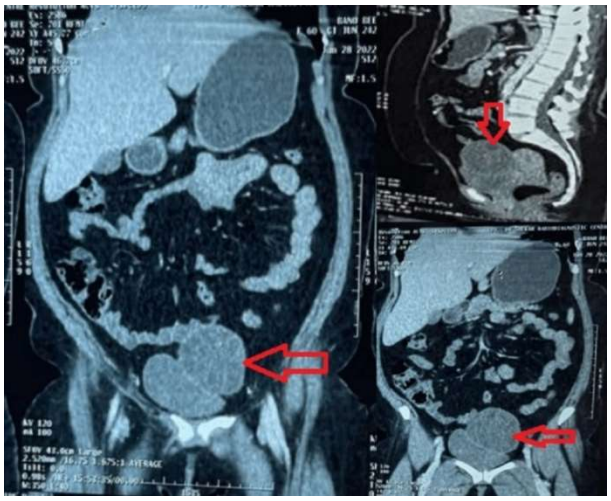

Figure 2 Contrast enhanced radiological tomography (cect) showing pelvic hydatid cyst

Figure 3 Intraoperative pictures showing isolated primary pelvic hydatid cyst

Histopathological examination revealed a hydatid cyst and confirmed the diagnosis. The post-operative period was uneventful and prescribed albendazole twice weekly for 2 months.

3. DISCUSSION

Echinococcus granulosus is a tapeworm whose definitive host is a dog where the life cycle is complete. As intermediate hosts are sheep, goats, cats or pigs. The egg containing food is what infects the human, who is the unintentional host. The eggs break through the intestinal wall and travel to other organs via lymphatic and blood circulation. They develop into hydatid-cysts in about five to fifteen years and start producing symptoms.

Hydatid cysts are a condition that affects people all over the world, although their frequency is higher in the Middle East, certain regions of India, such as north or central India and rural areas where people have direct contact with sheep, cattle and the local population. The worldwide study suggests that hydatid cysts are more prevalent in females as compared to males due to their participation in activities like farming and animal breeding. One of the most significant risk factors for hydatid disease is low public knowledge of the right consumption of hygienic food, as well as additional risk factors including a rural location; a difficult economic situation and a low level of education are present in our case as well. In our case, the patient complained of an umbilical hernia with low abdominal pain. Hydatid cysts are an incidental finding in Ultrasonography.

Incidental diagnosis occurs often in individuals who are asymptomatic and whose imaging is being done for another reason. The primary symptoms are brought on by pressure, peritoneal cavity rupture and allergic response. Only four ovarian hydatid cyst instances over the past 10 years have been reported in English, as per our literature search. Extremely seldom are primary peritoneal hydatid cysts. In females, if hydatid cysts are present in the pelvis region then symptoms such as stomach discomfort, lumps in the abdomen, irregular menses and infertility and pressure symptoms over other organs including the bladder and rectum.

With a sensitivity of 90-100%, CT provides a better characterization of the cystic mass and the disease extent (El-Tahir et al., 1992). The sensitivity of ultrasonography (USG), which has a range of 93% to 98%, allows for the accurate identification of cyst lining, septa and hydatid dust within the cyst (Paul et al., 2017).

A variety of imaging techniques, including x-rays, ultrasonography and CT scans are crucial for the diagnosis of hydatid illness. The USG divides hydatid cysts into six group kinds, univesicular and <50 mm in diameter, univesicular, echinococcus serological tests are more likely to be positive in an individual having a noticeable laminated layer, daughter cysts, cysts with obvious laminations and a strongly positive serological test, appears as a solid mass, degenerated and calcified cysts and one or more organs are affected by many cysts and daughter cysts (Paul et al., 2017; Shambesh et al., 1999).

CECT is a better modality for diagnosis and extension of disease because CT scan sensitivity is 90-100%. An echinococcus cyst is made up of an inner germinal layer known as an endocyst and an outside a cellular laminated membrane with a white color known as an ectocyst. The cellular germinal layers produce hydatid fluid, produce brood capsules with scolices and have a nucleus embedded in protoplasmic masses. Due to its high antigenicity, the fluid might cause an anaphylactic shock when burst. A pericyst or thick fibrous coating produced by the hosts' tissue response is seen outside the ectocyst (Paul et al., 2017).

Although it is believed that cystic Echinococcosis prevalence and incidence have significantly declined globally over the past few decades, the illness has nonetheless emerged in certain places where infection levels were previously low (Grosso et al., 2012). One of the main reasons contributing to infection transmission in India's endemic regions is a lack of public knowledge of the fact that eating tainted food transmits the disease (Hemachander et al., 2008).

Regardless of the matter where hydatid cysts are located on a person's body, surgery is the preferred therapy. Total excision of cysts whenever possible is the gold standard treatment for hydatid cysts. The most common complication is an allergic reaction due to the rupture of cysts and secondary infection or pressure symptoms. Symptoms can be prevented or reduced by peri-operatively prophylaxis like albendazole. An alternative therapeutic option other than surgery is ultrasonography guided intervention. In pair, a cyst is first percutaneously aspirated under USG guidance and then a protoscolicidal agent, such as 20% NaCl solution, 95% ethanol or betadine solution, is injected. Large cysts seen in the liver are the primary indicator for pair (Paul et al., 2017). Recurrence risk after surgery is from 8% to 22% and instances often manifest within two years of the preparation (Pedrosa et al., 2000).

4. CONCLUSION

An increased number of cases reported in the non-endemic area also presents as a challenging diagnosis. Regardless of the matter where hydatid cysts are located on a person's body, surgery is the preferred therapy according to the World Health Organization. Total excision of cysts whenever possible is the gold standard treatment for hydatid cysts. The most common complication is an allergic reaction due to the rupture of cysts and secondary infection or pressure symptoms. Protoscolicidal agent, such as 20% NaCl solution, 95% ethanol or betadine solution is injected to reduce the chances of anaphylaxis and recurrence. Pelvic hydatid can have an asymptomatic presentation. Hence USG abdomen and pelvis should be advised in any case of suspected asymptomatic pelvic mass causing pressure symptoms. Contrast enhanced computed tomography is a better modality for confirming the diagnosis. Hence, a hydatid cyst should be kept in mind while evaluating a primary pelvis cyst and ruled out as it is usually missed in asymptomatic patients.

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Author Contributions

Each author has contributed equally.

Informed consent

Written & Oral informed consent was obtained from the participants included in the study.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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