

## ISOLATED OVARIAN HYDATIDOSIS

### Case Report

## İZOLE OVERİYAN HİDATİDOZİS

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### ABSTRACT

Hydatid disease is an endemic infection which has predilection to involve any organ, mainly the liver and the lung. When located at unusual sites like our case of primary ovarian echinococcosis, it is a great mimicker. Biopsy or aspiration of such lesions may cause devastating consequences like anaphylactic shock and spillage, requiring particular caution before any kind of intervention. Being familiar with imaging features of hydatid disease is essential in improving diagnostic accuracy and also preventing these adverse consequences.

We report a case of primary ovarian hydatid cyst in postmenopausal women

with suspected ovarian cancer. A 52-year-old woman complaining of abdominopelvic pain and weight loss was admitted to the gynecology department. The patient had tenderness and palpable left adnexial mass on vaginal examination. Ultrasound revealed hypoechoic heterogeneous mass with serpentine low reflections. CT was negative for other organ involvements. MRI revealed collapsed parasitic membranes as twisted linear structures within the lesion.

This case report highlights one of the unique locations of primary Echinococcosis namely the ovaries and underlines the importance of imaging modalities in the differential diagnosis. Possibility of pelvic echinococcosis should be kept in mind in the pre-operative work up of ovarian masses especially in regions which are known to be endemic and in non-endemic geographic regions where immigrants are accepted.

**Key words:** echinococcus, hydatid disease, ovarian, primary, pelvic, MRI

### ÖZET

Kist Hidatik endemik bir infeksiyon olup başta karaciğer ve akciğer olmak üzere tüm organları tutabilir. Sunduğumuz primer over ekinokokuza gibi nadir tutulumun görüldüğü lokalizasyonlarda başka patolojileri taklit edebilir. Lezyonlara yönelik tanısal biyopsi ve aspirasyonun anafilaktik şok veya yayılıma neden olabileceğini göz önünde bulundurarak girişim öncesi tedbirli olmayı gerektirmektedir. Kist hidatik lezyonlarının radyolojik özelliklerini bilmek tanı ve olası yan etkileri önlemeye yardımcı olacaktır.

Over malignitesi şüphesi olan postmenapozal olguda rastladığımız primer over kist hidatik olgusunu sunmaktayız. Abdominopelvik ağrı ve kilo kaybı şikayetleriyle jinekoloji bölümüne başvuran 52 yaşındaki kadın hastanın vajinal muayenesinde sol over lojunda hassasiyet ve palpasyonda sertlik bulunmuştur. Yapılan

ultrasonografide içerisinde düşük ekolu yılanvari refleksiyonlar barındıran heterojen hipoekoik kitle görülmüştür. Batın BT tetkikinde herhangi bir organ tutulumu izlenmemiştir. MR tetkikinde içerisinde kollabe paraziter membranların izlendiği kitlesel lezyon görülmüştür.

Sunulan olgu, Ekinokokun çok nadir yerleşim yeri olan primer over tutulumunun ve ayırıcı tanıda radyolojik modalitelerin öneminin altını çizmektedir. Özellikle endemik bölgelerde, over kitlesi nedeniyle operasyon öncesi hazırlık döneminde pelvik ekinokok ayırıcı tanıda akılda tutulmalıdır.

**Anahtar kelimeler:** ekinokok, kist hidatik, over, primer, pelvik, MR görüntüleme

## INTRODUCTION

Hydatid disease (HD), also known as Echinococcosis, is common in developing countries especially in rural areas (1). HD is an important health problem in endemic areas like our country and in non-endemic geographic regions where immigrants are accepted (2). Hydatid cyst involving the female pelvis is rare and primary pelvic hydatid disease is even more uncommon. Pre-operative diagnosis of primary ovarian hydatidosis may be difficult as the lesion may mimic malignancy (3). Familiarity with atypical locations and imaging findings of HD may be helpful in making a prompt and accurate diagnosis especially in endemic areas.

## CASE REPORT

A 52- year- old woman who has resided most of her life in rural areas of Anatolia was admitted to the gynecology department complaining of abdominopelvic pain and weight loss. The patient had tenderness and palpable left adnexial mass on vaginal examination. Ultrasound revealed 7X4 cm hypoechoic heterogeneous mass in the left adnexial region. The ovoid lesion had regular borders with serpentine low reflections (Figure 1). The right ovary, uterus, and other intraabdominal organs were sonographically normal. No free fluid was seen in the pelvis. The laboratory tests revealed NEU 86%; HGB 11.2 g/dl, HCT 31%, EOS 0.1%, and tumor markers were negative. Her chest radiogram was normal. Hydatid disease and adnexial malignancy were the differentials. Abdominal CT demonstrated a mass with solid appearance. The lesion had fine linear and round densities showing no enhancement after contrast (Figure 2). MRI revealed a hypointense mass on T1W images, showing hyperintense collapsed membranes as twisted linear structures within the lesion on T2W images. A very thin hypointense rim around the lesion was noted on T2W images which slightly enhanced after contrast (Figure3). Based on these imaging findings and patient's history of residency, ovarian HD was diagnosed. The patient underwent surgery and pathology confirmed the diagnosis.



Fig1: A hypoechoic mass located in the left ovary with central serpentine low reflections on US



Fig2: A left adnexial solid mass with linear and round densities on CT



Fig3: MRI revealed a mass with intermediate signal on sagittal and coronal T2W images having hyperintense collapsed membranes as twisted linear structures. A very thin rim around the lesion which slightly enhanced after contrast was noted on T1W axial image

## DISCUSSION

Hydatidosis is an endemic and epidemic parasitic infection. Primary pelvic hydatidosis is very rare constituting 0.2-0.9% of HD. Pelvic involvement of hydatid disease is usually secondary to spontaneous or iatrogenic rupture of the liver cysts during surgery (2). Mechanism of primary pelvic Echinococcosis is unclear. Parasites spread via portal blood stream or lymphatics, and peritoneal fluid circulation phenomenon is one of the routes mentioned in the spread of the disease. The ileocolic region, the root of the sigmoid mesentery, and the Pouch of Douglas are water-shed regions where small amount of fluid accumulates and circulates continuously in the abdomen and cleared by the subphrenic lymphatics (4). These movements have been implicated as possible route of dissemination to produce primary pelvic organ HD.

Genital organs namely the ovaries, uterus, cervix, fallopian tubes, and

broad ligaments are reported to be the most affected areas in pelvis, which can be related to their high vascularity and attachment to the peritoneum of Douglas and suspensory ligaments (2, 5-7). Incidence of hydatid cyst of the ovary is 0.2-2.25% and pre-operative diagnosis of primary pelvic hydatidosis may be difficult as the lesion mimics malignancy (3). Clinical presentation depends on the size and site of the lesion. The enlarging unruptured cyst becomes symptomatic with complaints such as abdominal pain and menstrual disorders due to compression or distortion. Asymptomatic cases are found incidentally in gynecologic examinations. Diagnosis of hydatid cyst of female pelvis generally takes place after exploratory laparoscopy or surgery. Pre-operative diagnosis of pelvic HD however, can be possible with imaging studies such as US, CT or MRI.

Ultrasonography is the first choice in radiological imaging for the diagnosis of hydatid cysts. Gharbi et al. classified hydatid cysts into five types based on

stage of maturation: Type I is purely cystic; type II is purely cystic with hydatid sand; type III has the membrane undulating in the cystic cavity; type IV is the peripheral or diffuse distribution of coarse echoes in a complex and heterogeneous mass; and type V is calcified (8). The WHO classified the hydatid cysts into three types: active, inactive, and transition type. Differential diagnosis of type I Gharbi lesions from simple ovarian cysts, and type IV lesions from adnexial benign and malignant lesions can be difficult.

CT has a high sensitivity for HD. CT scan not only rules out other organ involvements, but also shows the inactive state of the lesion by demonstrating multiple cystic lesions with calcification in the peritoneum. Calcification of the cyst wall or internal septa is easily detected at CT. A hydatid cyst typically demonstrates a high-attenuation wall on unenhanced images even without calcification. Detachment of the laminated membrane from the pericyst can be visualized as linear areas of increased attenuation within the cyst.

If there are no calcified membranes, daughter vesicles or hydatid sand on the US for diagnosis of hydatid cysts, MR imaging is helpful in differential diagnosis. Hydatid cysts may have a low-signal-intensity rim on T2W MR Image representing the pericyst rich in collagen. Collapsed parasitic membranes appear as twisted linear structures within the cyst on MRI. Cece et al. has shown that the measurement of the ADC value with diffusion MRI could be useful in the classification of hepatic hydatid cysts in determining a suitable patient group for PAIR treatment with mean ADC values (9). MRI is sensitive in differentiating type IV lesions from adnexial malignancies, endometriomas, tuba-ovarian abscesses, fibroids with cystic degenerations, and even ovarian torsions reported in literature (10). The gold standard test for diagnosis of hydatidosis is to show laminated membrane and scolices microscopically. Both CT and MRI can demonstrate the

laminated membrane and additionally differentiate other pelvic pathologies.

In conclusion, primary ovarian hydatid disease is very rare and clinicians should consider hydatid cyst among differential diagnosis whenever a pelvic mass is found, especially in endemic areas. Being familiar with imaging features of hydatid disease is essential in improving the diagnostic accuracy and preventing treatment complications.

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