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TRIPLE TWIST IN A CYSTIC TALE: DIAGNOSTIC DILEMMA IN ADNEXAL MASSES

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ABSTRACT

Adnexal masses represent a frequent clinical problem in gynecological practice and often pose diagnostic challenges due to overlapping clinical, biochemical, and radiological features. Mature cystic teratoma (MCT), mucinous cystadenoma, and ovarian hydatid cyst are pathologically distinct entities with differing etiologies, management strategies, and prognostic implications. Ovarian hydatid disease is exceptionally rare and is typically secondary to disseminated echinococcosis. We report a diagnostically challenging case of a 44-year-old woman who was incidentally detected with a complex adnexal mass where ultrasonography and magnetic resonance imaging suggested mucinous cystadenoma or ovarian hydatid cyst. Definitive diagnosis of mature cystic teratoma was established only after surgical excision and histopathological examination. This case highlights the limitations of imaging in complex ovarian cysts and underscores the indispensable role of histopathology in achieving diagnostic certainty.

KEYWORDS: Mature cystic teratoma; ovarian hydatid cyst; mucinous cystadenoma; adnexal mass; diagnostic dilemma.

INTRODUCTION

Adnexal masses encompass a wide spectrum of benign and malignant gynecological conditions. Mature cystic teratoma is the most common benign ovarian germ cell tumor, accounting for approximately 10–20% of all ovarian neoplasms, predominantly affecting women of reproductive age.[2,3] Mucinous cystadenomas are benign epithelial tumors characterized by large, multiloculated cysts and account for 10–15% of ovarian tumors. In contrast, ovarian hydatid cysts are exceedingly rare, constituting less than 0.5% of cases, and are usually secondary to systemic echinococcal disease.[1]

Accurate preoperative diagnosis is crucial to guide surgical planning and avoid inadvertent complications, especially in suspected hydatid disease where spillage can lead to anaphylaxis or dissemination.[1] However, overlapping radiological features may obscure diagnosis, particularly when classical signs are absent. This report describes an unusual presentation of mature cystic teratoma masquerading as other cystic adnexal pathologies.[5]

CASE REPORT

A 44-year-old multiparous woman, from Andhra Pradesh, presented following incidental detection of a right adnexal mass during a routine health check-up where pelvic ultrasonography demonstrated a bulky uterus with a small intramural fibroid and a well-defined hyperechoic cystic lesion measuring approximately 94 × 80 × 88 mm in the right adnexa, suggestive of mucinous cystadenoma. (Fig 1).

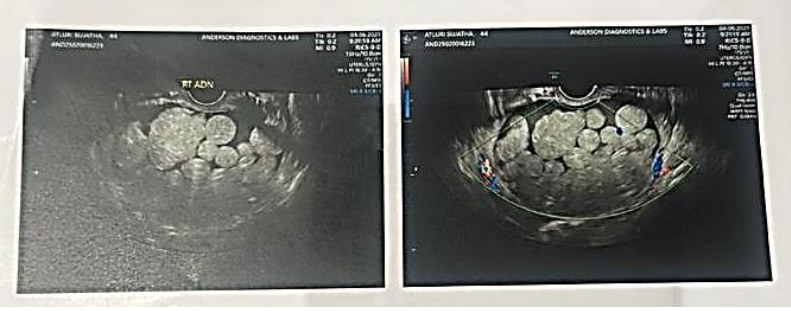

Fig. 1: Ultrasonogram showing cystic lesion of right adnexa.

She was asymptomatic with no complaints of abdominal pain, menstrual irregularities, weight loss, or gastrointestinal symptoms. There was no history suggestive of exposure to echinococcosis.

General examination and vital parameters were within normal limits. Abdominal examination revealed a soft, non-tender abdomen. On pelvic examination, the uterus was anteverted, normal in size, and mobile. Right forniceal fullness was present without tenderness, while the left fornix was free.

Laboratory investigations revealed hemoglobin of 12.3 g/dL and a total leukocyte count of 8,500/µL. Serum tumor markers including CA-125 were within normal limits.

Magnetic resonance imaging revealed a large unilocular cystic lesion measuring 7.6 × 10.9 × 11.9 cm with multiple internal small round and oval cysts of intermediate signal intensity located in the pouch of Douglas, compressing and displacing the uterus anteriorly. Differential diagnoses considered were right ovarian hydatid cyst and mucinous cystadenoma.

The patient underwent exploratory laparotomy. Intraoperatively, a right ovarian cystic mass was noted without evidence of peritoneal hydatid disease. (Fig 2). Right salpingo-oophorectomy was performed. Given the preoperative suspicion of hydatid cyst, the patient was initiated on postoperative empirical albendazole therapy.

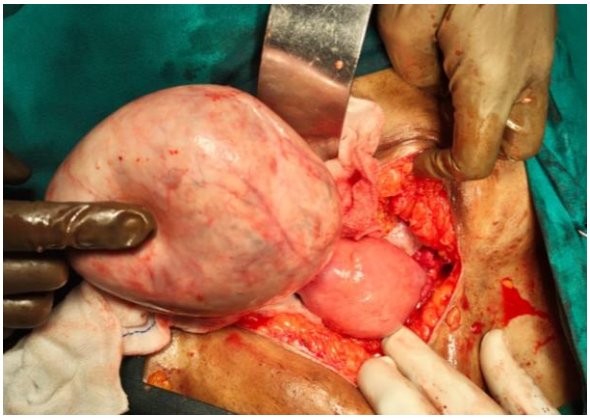

Fig. 3: Intra-operative finding of right ovarian mass.

HISTOPATHOLOGY

Gross examination revealed a cystic ovarian mass. Cut section showed multiple cystic lesions made of pultaceous material within the ovarian cyst. (Fig 3). Microscopic evaluation demonstrated mature tissue elements derived from ectodermal origin, consistent with mature cystic teratoma. No parasitic structures or features of mucinous cystadenoma were identified. (Fig 4).

Fig 3: Cut section of ovarian mass- showing ovarian cyst with pultaceous material.

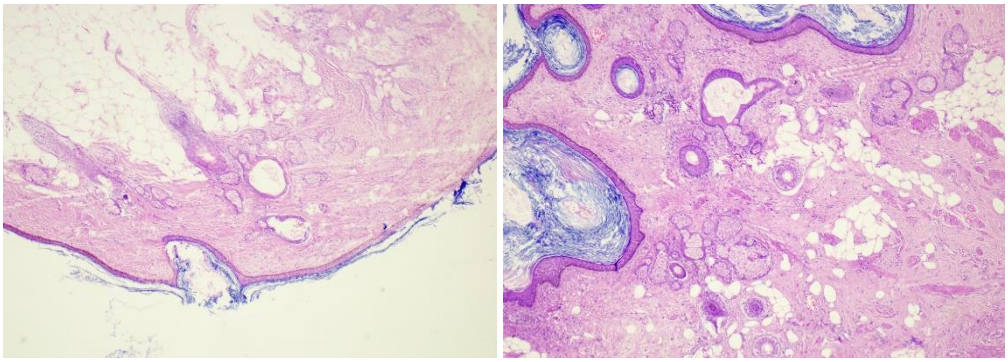

Fig 4: Histopathology slide showing mature tissue elements derived from ectodermal origin, consistent with mature cystic teratoma and No parasitic structures.

DISCUSSION

This case illustrates the diagnostic complexity associated with adnexal masses lacking classical radiological hallmarks. Although mature cystic teratomas typically exhibit fat, calcifications, or Rokitansky nodules on imaging, atypical presentations can mimic other cystic ovarian lesions.[2,3] Echinococcosis is endemic in India with incidence of 1 to 200 per 100000 population with higher incidence in Kashmir, Tamil Nadu, Andhra Pradesh and central parts of India.[1,6] Ovarian hydatid disease, while rare, remains an important differential diagnosis in endemic regions and necessitates heightened caution due to potential intraoperative complications.[5]

MRI is considered superior to ultrasonography in characterizing adnexal masses; however, it may still fail to conclusively differentiate complex cysts. Consequently, surgical exploration followed by histopathological evaluation remains essential for definitive diagnosis and appropriate management.

CONCLUSION

Cystic teratomas and hydatid cysts may mimic each other and differentiating the two requires detailed and careful clinical history, radiological imaging, surgical exploration and histopathological confirmation. “Don’t trust the cyst at first site”. Mature cystic teratoma should be considered in the differential diagnosis of complex adnexal masses even when characteristic imaging features are absent. This case emphasizes the limitations of radiological modalities and reinforces histopathology as the gold standard for diagnosis.

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Conflict of interest

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