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Uretero-hydronephrosis Revealing an Ovarian Hydatid Cyst: A Rare Case Report

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ABSTRACT

Ovarian hydatid cysts are an exceptionally rare manifestation of Echinococcus granulosus, accounting for less than 1% of cases, and can lead to urinary obstruction when compressing the ureters. We report a 73-year-old postmenopausal woman presenting with recurrent renal colic, pelvic heaviness, and right uretero-hydronephrosis. Imaging revealed a multiloculated ovarian cyst and a hepatic cyst, while hydatid serology was positive. The patient underwent surgical excision of both cysts, followed by postoperative Albendazole therapy. Diagnosis relied on a combination of epidemiological exposure, imaging, and serology. This case underscores the need to consider hydatid disease in the differential diagnosis of ovarian cystic lesions, particularly in endemic regions, and highlights that timely surgical intervention combined with antiparasitic therapy can prevent serious complications such as cyst rupture, anaphylaxis, or urinary obstruction, demonstrating the critical role of integrated diagnostic and therapeutic management in rare pelvic hydatidosis.

KEYWORDS

Ovarian hydatid cyst, Pelvic hydatidosis, Uretero-hydronephrosis, Echinococcus granulosus, Albendazole, Case Report

MAIN ARTICLE

INTRODUCTION

Hydatidosis is a zoonotic disease caused by the larval stage of Echinococcus granulosus. Dogs serve as the definitive hosts, while livestock act as intermediate hosts, and humans are accidental hosts infected through ingestion of parasite eggs in contaminated food or water [1,2]. The disease is endemic in regions with traditional animal husbandry, including the Mediterranean basin, South America, the Middle East, Australia, and East Africa [1,3,4]. Hydatid cysts most commonly affect the liver (approximately 75%) and lungs (24%), while pelvic involvement is extremely rare, representing only 0.2–1% of reported cases [4,5].

Ovarian hydatid cysts are exceptionally uncommon, and their clinical presentation can mimic other pelvic masses, making diagnosis challenging. They may remain asymptomatic for long periods and are sometimes revealed incidentally or through complications such as urinary obstruction [4,5]. We report a rare case of an ovarian hydatid cyst in a postmenopausal woman, uniquely presenting with uretero-hydronephrosis and recurrent renal colic, highlighting the importance of considering hydatid disease in the differential diagnosis of pelvic cystic lesions in endemic regions.

PATIENT AND OBSERVATION

Patient Information

A 73-year-old nulliparous, postmenopausal woman (postmenopause for 20 years) presented with recurrent renal colic worsening over several weeks. She also reported occasional urinary retention and a sensation of pelvic heaviness, without general health deterioration. The patient had a history of contact with dogs but no history of contraceptive use. She had no relevant family or genetic history. Past medical interventions were unremarkable, with no prior pelvic surgeries or known urinary tract conditions. Physical examination revealed mild tenderness in the right flank and lower abdomen, with no palpable masses. No fever or signs of systemic infection were observed. Vital signs were within normal limits. The remainder of the abdominal and pelvic examination was unremarkable.

Diagnostic Assessment

- **Laboratory:** Hydatid serology positive.
- **Imaging:**
  - Renal and bladder ultrasonography: moderate right pyelocaliceal dilatation, multiloculated pelvic mass.
  - Abdominal CT: cystic ovarian lesion with calcifications causing uretero-hydronephrosis (Figures 1A, 2A, 3A); hepatic cyst with calcifications (Figure 5A).
  - Pelvic MRI: multiloculated ovarian cyst with characteristic features of hydatid disease (Figures 1B, 2B, 3B, 4).

DISCUSSION

Hydatidosis is a zoonotic disease caused by the larval form of Echinococcus granulosus, transmitted to humans either indirectly through contact with infected dogs or directly via ingestion of parasite eggs in contaminated food or water. Dogs are the definitive hosts, and livestock, especially sheep, are intermediate hosts [2,3]. While hepatic and pulmonary localizations are most common, pelvic involvement is extremely rare, representing 0.2–1% of cases, with the ovary involved in approximately 80% of pelvic cases [1,5,6]. In this case, both ovarian and hepatic cysts were identified, highlighting the potential for systemic dissemination. The main clinical symptoms of pelvic hydatid cysts are nonspecific and relate to mass effect, such as renal colic, abdominal discomfort, urinary retention, and pelvic heaviness, as seen in our patient [2–6]. The main risks include cyst rupture with anaphylaxis, compression of adjacent structures, and secondary infection [1,2,4].

Diagnosis of ovarian hydatid cysts relies on a combination of epidemiological, clinical, serological, and imaging data. Hydatid serology is essential for confirmation, especially in active disease [2,3,5]. Ultrasound is the first-line modality to determine cyst location, size, and internal structure, while CT allows assessment of cyst extent, relationship with neighboring organs, and identification of multiple lesions [4]. MRI provides superior soft-tissue contrast and anatomical delineation. The differential diagnosis includes simple ovarian cysts, dermoid cysts, ovarian endometriomas, and ovarian torsion (table 1), making a comprehensive diagnostic approach crucial [3,4,6]. The main strength of this case report lies in its demonstration of the rare presentation of ovarian hydatid cyst causing uretero-

hydronephrosis and the integration of multimodal imaging for accurate diagnosis. Limitations include the unavailability of histopathological confirmation, which was performed externally.

Management of ovarian hydatid cysts is multidisciplinary, combining surgical excision and pharmacologic therapy. Radical cystectomy is the gold standard when feasible, with precautions to prevent spillage and peritoneal dissemination [2,6]. Albendazole is used postoperatively to reduce recurrence risk and may be indicated as primary therapy when surgery is not possible, in cases of multiple cysts, or in high-risk patients [2,5]. In this patient, surgical removal of ovarian and hepatic cysts followed by Albendazole therapy resulted in symptom resolution and no complications at two-month follow-up. This case underscores the need for vigilance in endemic regions, the importance of early multimodal diagnosis, and the effectiveness of combined surgical and medical management in preventing serious complications, including cyst rupture, urinary obstruction, and anaphylactic shock.

CONCLUSION

Ovarian hydatidosis, although extremely rare, can lead to significant reproductive and urinary complications. In regions where the disease is endemic, hydatid cysts should be considered in the differential diagnosis of any simple or complex ovarian mass. Accurate diagnosis requires a comprehensive approach that integrates patient history, clinical findings, serological testing, and imaging studies, particularly ultrasonography and CT scan. The primary treatment is surgical, with radical cystectomy considered the gold standard, complemented by postoperative antiparasitic therapy to reduce the risk of recurrence. Prevention remains the most effective strategy and depends on safe food and water practices, control and deworming of domestic and stray dogs, and community education to reduce transmission in at-risk populations.

FIGURES:

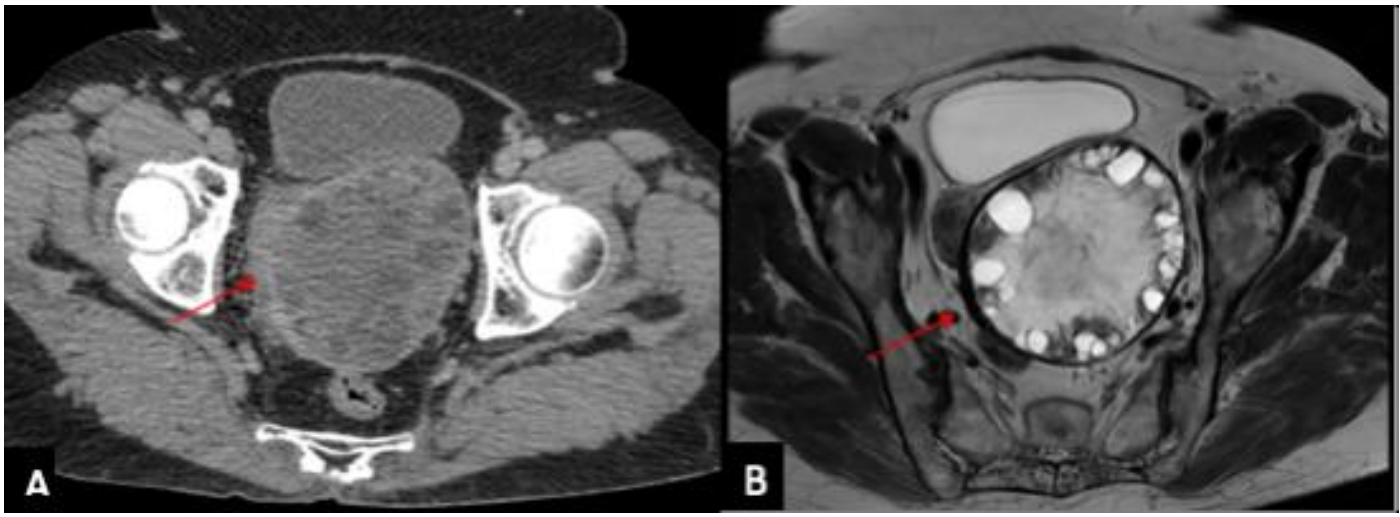

Figure 1 :
A. *CT scan showing a well-circumscribed midline pelvic mass with mixed solid–cystic components, characterized by multiple peripheral cystic formations arranged in a crown-like pattern, along with a central solid portion.*
B. *Axial T2-weighted MRI demonstrating the same pelvic mass, with multiple cystic structures exhibiting high T2 signal intensity and an associated solid component.*

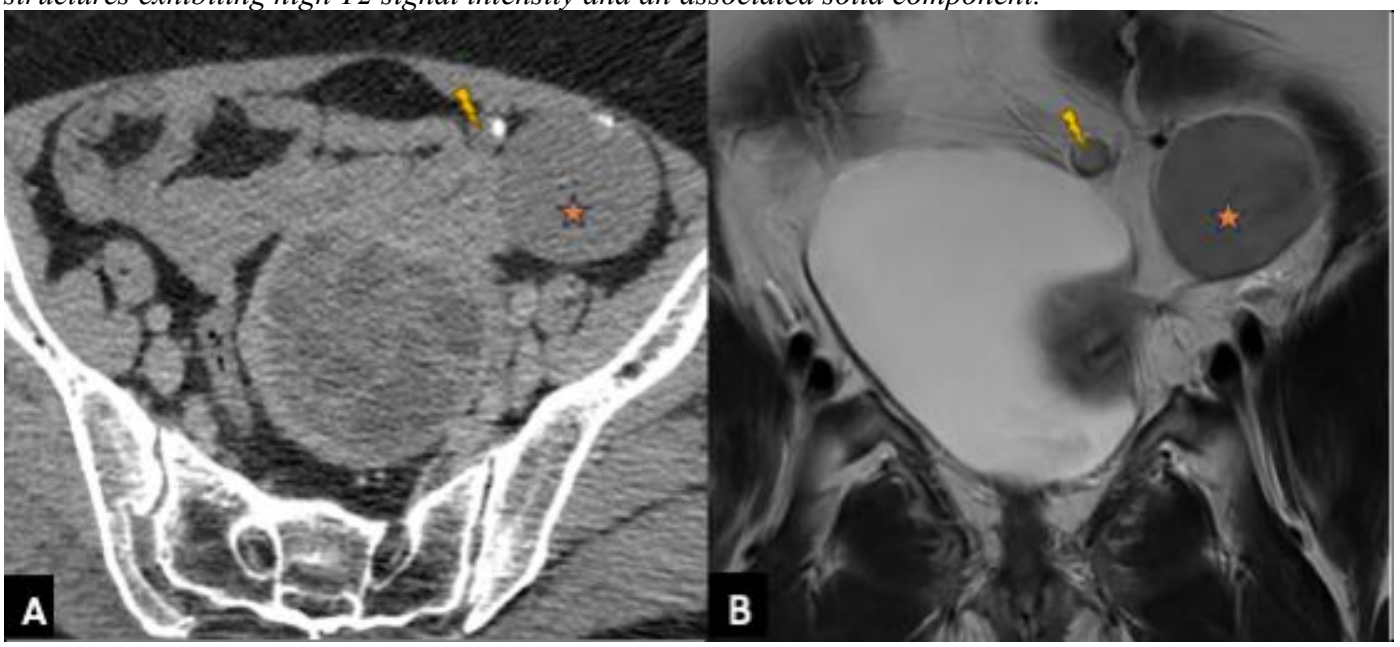

Figure 2 :
A. *CT scan depicting a well-defined pelvic mass in the left iliac fossa (orange star), with smooth margins and soft-tissue density, accompanied by a satellite nodule of similar characteristics (yellow flash).*
B. *Coronal T2-weighted MRI showing both the pelvic mass and the satellite nodule, each demonstrating intermediate T2 signal intensity.*

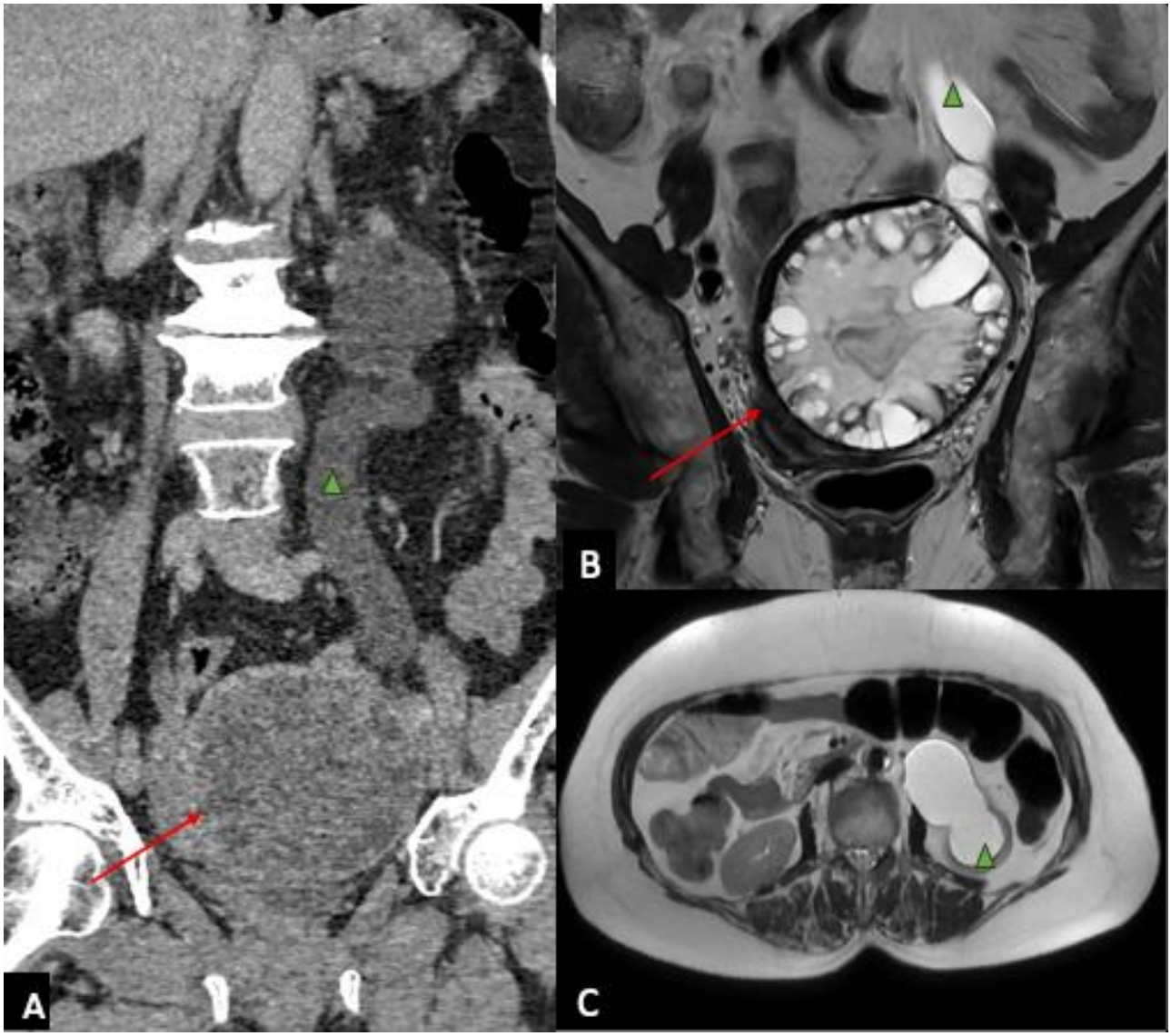

Figure 3 : CT (A) and MRI (B and C) images of the mixed pelvic mass (red arrow), exerting mass effect on the bladder and displacing the left ureter, resulting in upstream left ureteral dilatation (green triangle).

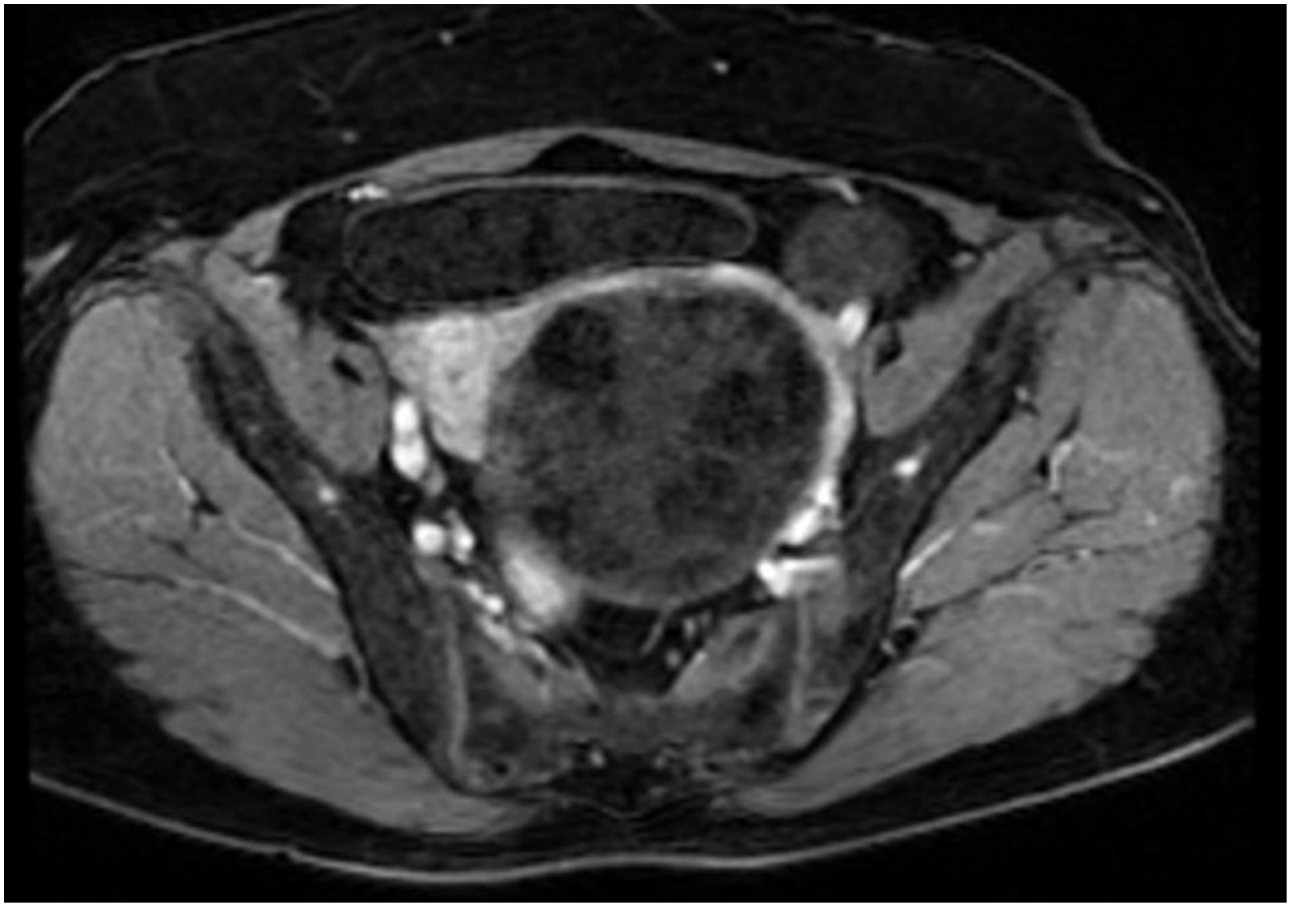

Figure 4 : Contrast-enhanced T1-weighted fat-suppressed MRI showing the pelvic masses, with no post-contrast enhancement.

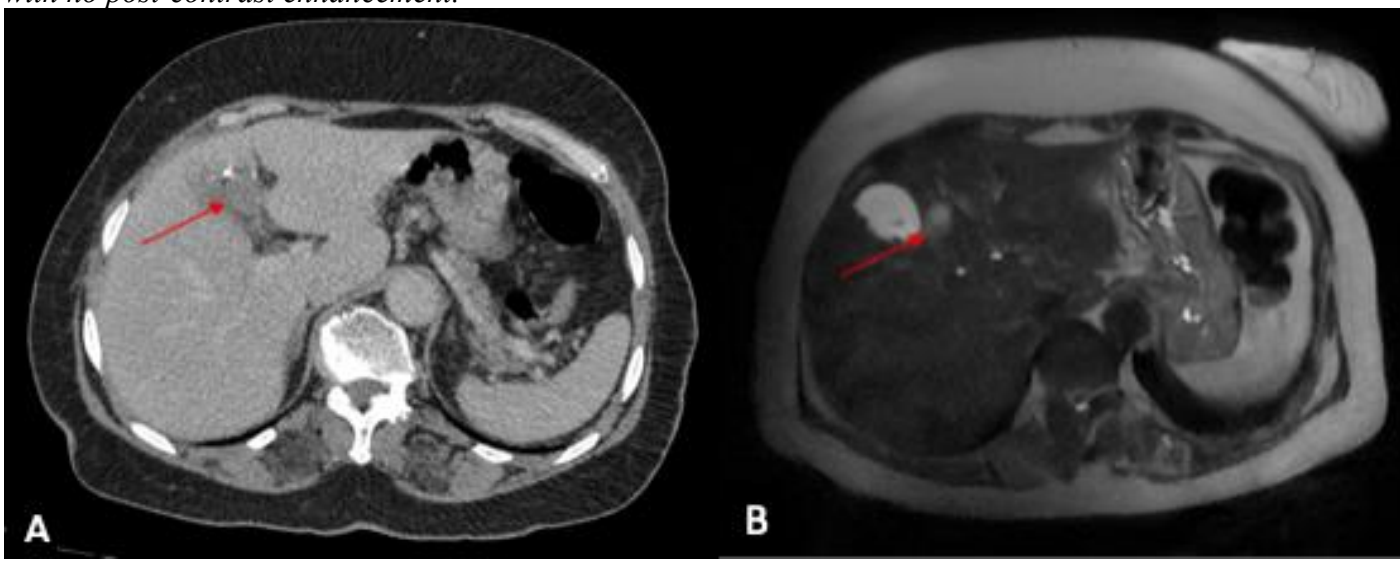

Figure 5 : CT (A) and MRI (B) images demonstrating a hepatic lesion (red arrow) consistent with a hydatid liver cyst.

TABLES :

Table 1 : Differential diagnosis of ovarian cystic lesions according to imaging features.

Pathology	***Ultrasound characteristics***	***CT characteristics***	***MRI characteristics***	***Other examinations***
Ovarian hydatid cyst	*Multiloculated cyst with daughter vesicles; "water lily sign"; sometimes calcified wall; may mimic a cystic mass.*	*Well-defined cystic lesion, possibly with calcified walls or septa; multilocular aspect; may show daughter cysts; mass effect on adjacent organs.*	*Multivesicular lesion with hypointense wall on T1 and hyperintense on T2; presence of daughter cysts; no enhancement of cyst content.*	*Positive hydatid serology; eosinophilia may be present.*
Simple ovarian cyst	*Anechoic, unilocular cyst with thin regular wall and posterior acoustic enhancement; no internal echoes.*	*Homogeneous hypodense fluid-filled lesion without septations or calcifications.*	*Homogeneous hyperintense signal on T2, hypointense on T1; thin wall, no enhancement.*	*Normal tumor markers (CA-125, CEA).*
Benign ovarian tumor (e.g., cystadenoma)	*Unilocular or multilocular cyst with thin septa; may contain clear or mucinous fluid; no solid component.*	*Well-circumscribed cystic mass; thin or slightly thickened wall; may contain septa or minimal mural enhancement.*	*High signal on T2; low on T1 (serous type) or high on T1 (mucinous type); no restricted diffusion.*	*Tumor markers may be slightly elevated depending on subtype.*
Dermoid cyst (mature teratoma)	*Complex cyst with echogenic components, acoustic shadowing ("dermoid plug" or "tip of the iceberg" sign).*	*Fat-fluid level; calcified or tooth-like components; heterogeneous density.*	*High signal intensity on both T1 and T2 due to fat; signal drop on fat-suppression sequences.*	*Normal serology; diagnosis confirmed by imaging.*
Ovarian endometrioma	*Homogeneous hypoechoic cyst with fine internal echoes ("ground-glass" appearance); no*	*Hyperdense lesion due to blood content; may show minimal enhancement of the wall.*	*High signal on T1 (blood products); "shading" effect on T2 (signal loss from*	*Elevated CA-125; history of pelvic pain or endometriosis.*

	internal vascularity.		*chronic hemorrhage).*	
Ovarian torsion	*Enlarged ovary with peripheral follicles; absence or decrease of Doppler flow; heterogeneous stroma.*	*Enlarged twisted ovary; thickened wall; possible associated hemorrhagic cyst; "whirlpool sign".*	*Enlarged ovary with hemorrhagic components; twisted pedicle visible; reduced perfusion on contrast sequences.*	*Urgent surgical exploration confirms diagnosis.*

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