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The Utility of Ultrasonography in Differentiating Complete and Partial Hydatidiform Moles

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Introduction

Hydatidiform mole (HM), encompassing complete (CHM) and partial (PHM) forms, is a gestational trophoblastic disease associated with variable clinical outcomes and risks of progression to persistent trophoblastic neoplasia. Early and accurate differentiation between CHM and PHM is critical for guiding management and surveillance strategies. Ultrasonography has long been the primary diagnostic tool, yet its accuracy and distinguishing features between the two entities remain a subject of debate. This study aims to evaluate the diagnostic performance of ultrasonography in distinguishing partial from complete hydatidiform moles.

Objective

To assess the efficacy of ultrasonography as a diagnostic tool for distinguishing between partial and complete hydatidiform moles..

Methods

A retrospective analysis was conducted on ultrasonographic (US) images from women diagnosed with hydatidiform mole (HM) between January 1, 2011, and December 31, 2020. The ultrasonographic features observed in women with complete hydatidiform mole (CHM) were systematically analyzed and compared with those of women diagnosed with partial hydatidiform mole (PHM).

Results

We documented 119 cases of hydatidiform moles, comprising 83 cases of complete hydatidiform moles and 36 cases of partial hydatidiform moles. The average frequency of hydatidiform moles (HM) was thus 2.37% among abortions and 1.45‰ among pregnancies.

The study revealed that ultrasonography accurately diagnosed hydatidiform mole in 94.1% of cases.

Specific ultrasonographic findings, such as a honeycomb appearance, missed abortion, retained products of conception, or hyperplastic endometrium, were significantly predictive of complete hydatidiform mole ($p < 0.05$).

Notably, the honeycomb appearance on ultrasound was more strongly associated with complete hydatidiform mole, demonstrating a sensitivity of 95.1% and a specificity of 33.3%. In contrast, for partial hydatidiform mole (PHM), the sensitivity of this sign was only 66.6%.

The presence of an embryonic pregnancy, with or without a honeycomb appearance, showed a sensitivity of 25% for partial hydatidiform mole and a specificity of 93%.

Conclusion

- **Ultrasonography is a valuable tool for the differential diagnosis of complete and partial hydatidiform moles. However, routine histological examination of the products of conception remains essential to ensure diagnostic accuracy.**

Table 1. Comparison of Ultrasonographic Findings in Patients with Hydatidiform Mole According to Histological Type

Ultrasonographic Findings	Partial Mole (n, %)	Complete Mole (n, %)	p-value
Honeycomb appearance	24 (19.6%)	77 (63.1%)	$< 10^{-3}$
Honeycomb appearance + intrauterine gestation (IUG)	8 (6.5%)	0 (0%)	$< 10^{-3}$
Intrauterine gestation (IUG) alone	3 (2.5%)	0 (0%)	$< 10^{-3}$
Retained products	0 (0%)	2 (1.6%)	0.672
Endometrial hyperplasia	0 (0%)	2 (1.6%)	$< 10^{-3}$
Theca lutein cysts	3 (2.5%)	8 (6.5%)	0.303

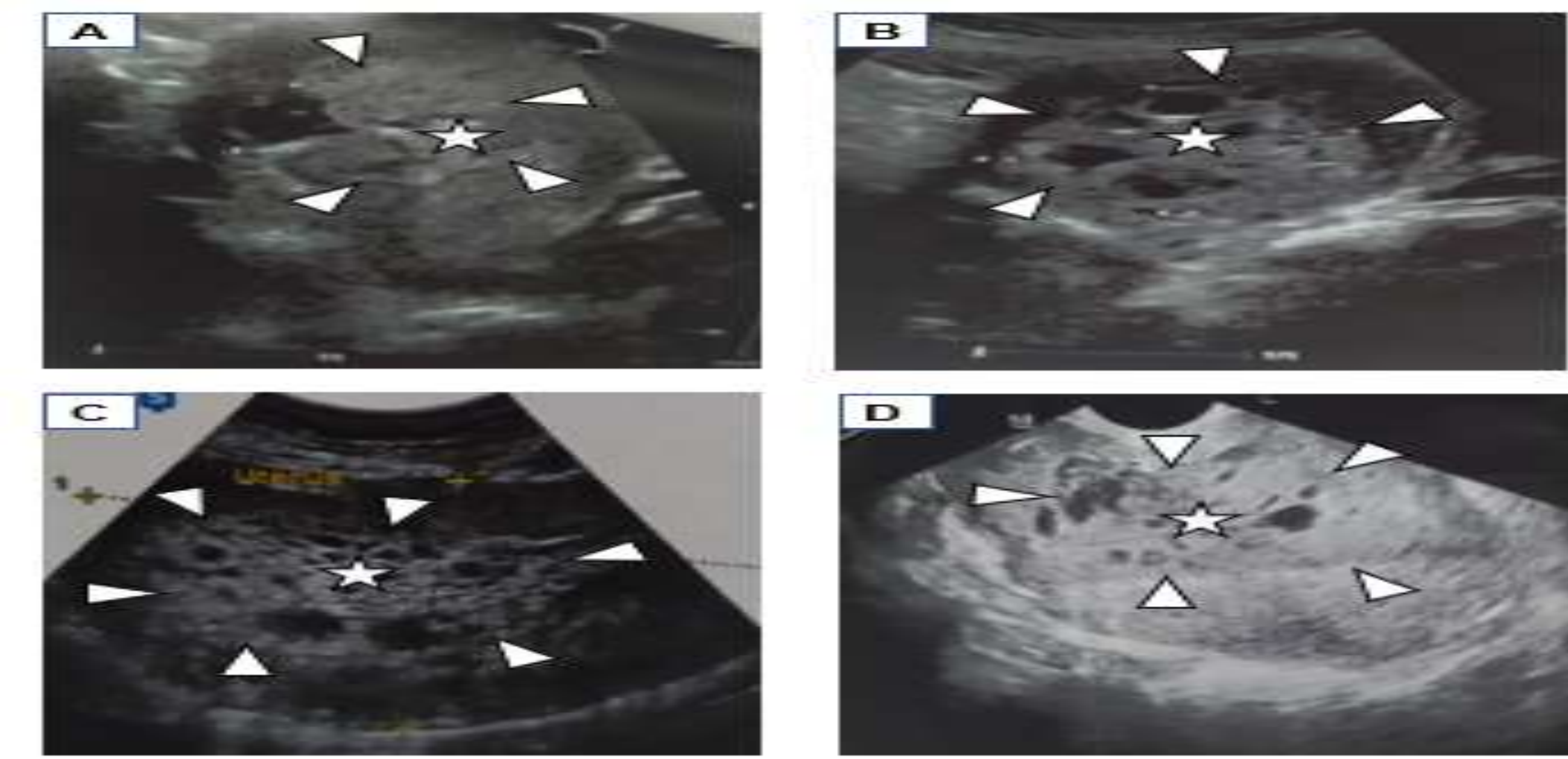


Figure 1. Pelvic ultrasound performed via the abdominal route (images A and B) and the transvaginal route (images C and D) showing a heterogeneous intra-cavitary mass with microcysts (honeycomb vesicular appearance, stars), with regular margins and no evidence of myometrial invasion (arrows).

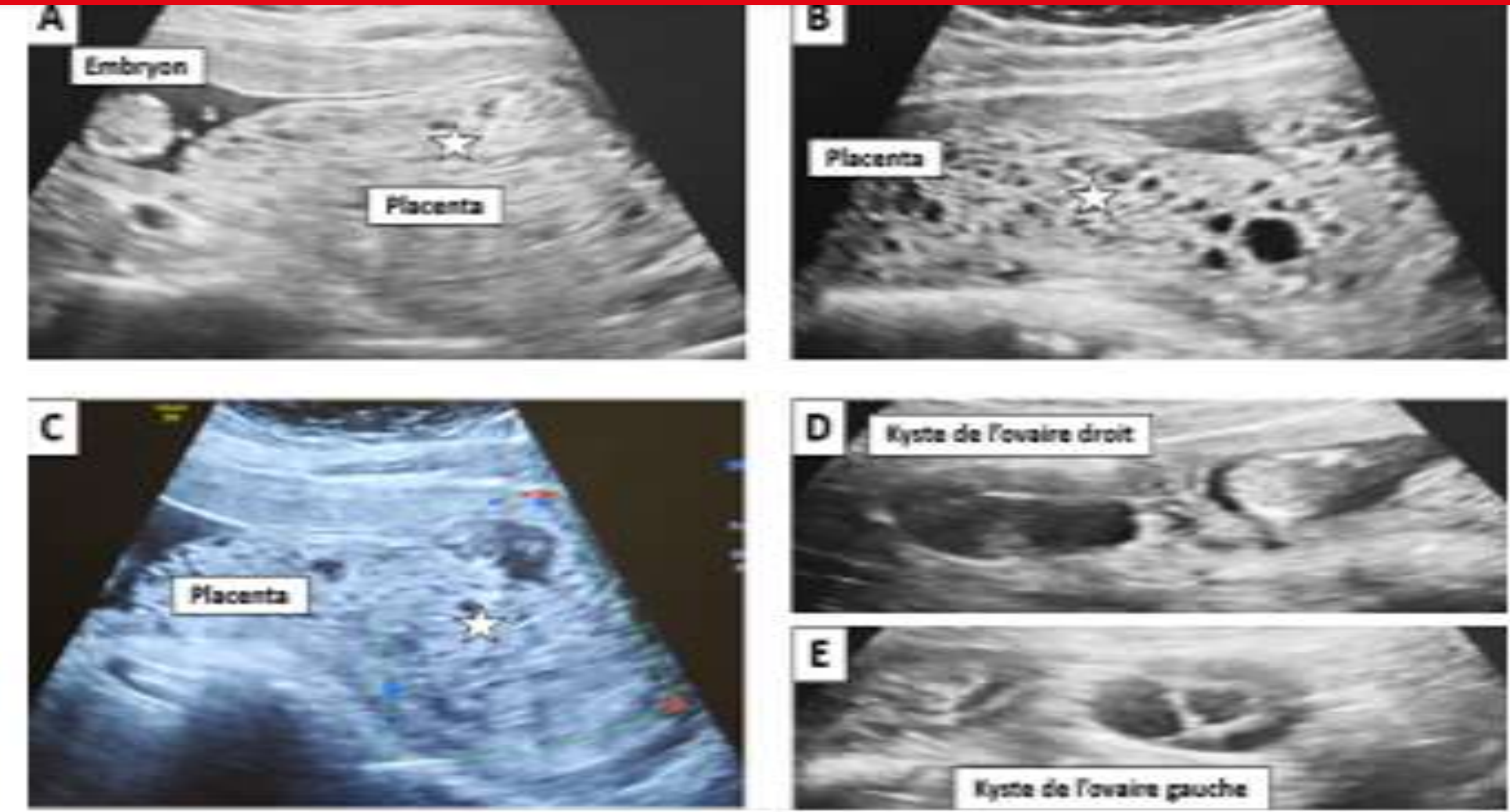


Figure 2. Pelvic ultrasound performed via the abdominal route showing an ongoing pregnancy with a 10-week embryo (image A) and a heterogeneous placenta with microcysts (honeycomb vesicular appearance, stars) (images A, B, and C). The mass exhibits regular margins without evidence of myometrial invasion. Two theca lutein cysts are also observed, measuring 3 cm on the left (image E) and 4 cm on the right (image D).