

EP02.45. Steroid cell tumour: findings and differential diagnoses

Wang YY, Lee SL, Tay SK, Yang LY, Lim SK

Department of Obstetrics and Gynaecology, Singapore General Hospital, Singapore 169608, Singapore.

Introduction

Steroid cell tumours(SCTs) of the ovary are rare sex-cord stromal neoplasms, accounting for less than 0.1% of all ovarian tumours. Approximately, one-third of SCTs exhibit malignant behaviours.

Case report

A 73 year-old woman with a history of prior vaginal hysterectomy and vaginal repair for prolapse was admitted to hospital for investigation of renal impairment in October 2023. A CT scan of abdomen and pelvis reported bilateral hydronephrosis and bladder outlet obstruction. There was also a 2.2-cm enhancing lesion, likely of right ovary in origin. MRI imaging studies reported that the lesion was stable since 2019, likely benign in nature. In January 2024, a pelvic ultrasound scan reported that the lesion was solid, measured 2.9cmx1.9cmx2.2cm. The IOTA score indicated a likelihood of malignancy of 31.7%. The patient made an informed decision against surgical intervention. A follow-up CTAP in August 2024 again reported the right ovary mass remained stable in dimensions, likely benign. On ultrasound scan, the mass measured 3.4cmx2.0cmx2.7cm, solid with cystic changes. In addition, there were two 0.5-cm cysts located above the mass. The IOTA score estimated the likelihood of malignancy was 39.7%. The serum Ca125 level was 5.7 U/mL. The patient underwent a laparoscopic bilateral salpingo -oophorectomy in September 2024. The surgery was uneventful.

Histopathology: RO measures 3 x 2 x 1.5 cm. Two 4mm simple paratubal cysts, Sectioning of the ovary shows a circumscribed tumour measuring 2.2 x 2.1 x 1.5 cm, abutting the external

surface of the ovary, capsule and serosa are intact.

Discussion and Conclusion

In our index case, the sex-cord tumour is located in the right adnexa of a postmenopausal patient. The acoustic impedances between the ovarian stroma and the tumour was probably low, as the outline of the mass was vague on several sections. Retrospective review of the scans suggested the mass to be occupying one compartment of the ovary, there is a probable ovarian crescent sign as well. On another image with evaluation on Colour Doppler, the vessels appear to be encircling a circumscribed mass within the “ovary”. Within the SCT, there are some small cysts. The small cystic areas within the ovarian stroma may represent corpus albicans or some small cystic inclusions. Both CT and MRI monitoring opined that mass probably benign due to its long-term stability. Although it has some overlapping US features as ovarian fibroma with degenerative changes, two consecutive US scans coupled with IOTA scoring demonstrated high IOTA scores, hence, highlighting to clinicians that they may be occult malignancy. The IOTA scoring with the exact measurements of the SCT, i.e., 2.2 x 2.1 x 1.5 cm would be 22.2%. IOTA scoring on the second scan noted no change, at 22.2%, classifying the mass as malignant. Therefore, IOTA scoring provides classification of adnexal masses with high accuracy.

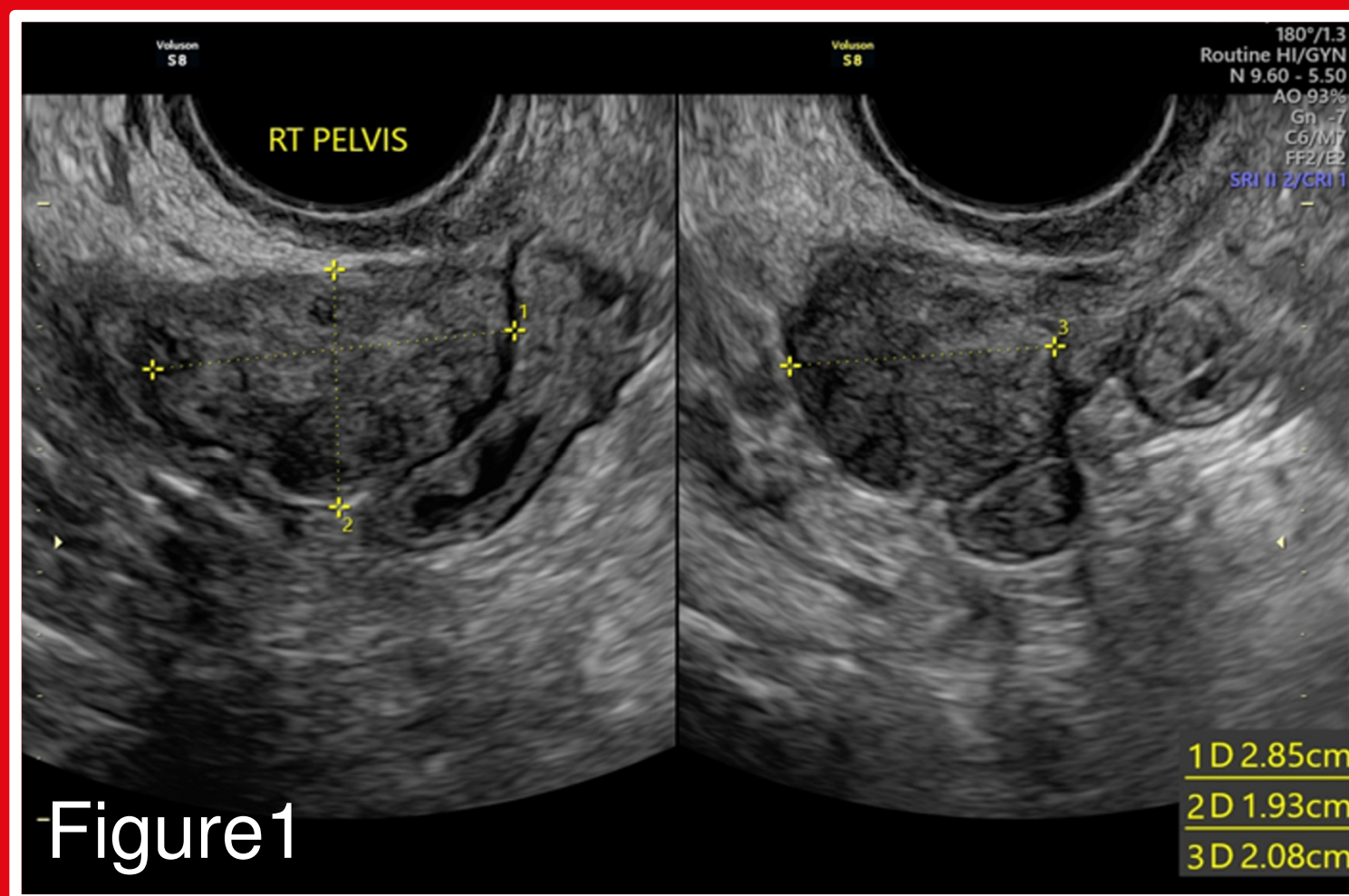


Figure1. Grey-scale Ultrasound in Jan 2024.

The RO measured 2.9 x 1.9 x 2.1 cm, appeared as a slightly lobulated heterogeneous mass. Outline of the ovarian mass was vaguely demonstrated.

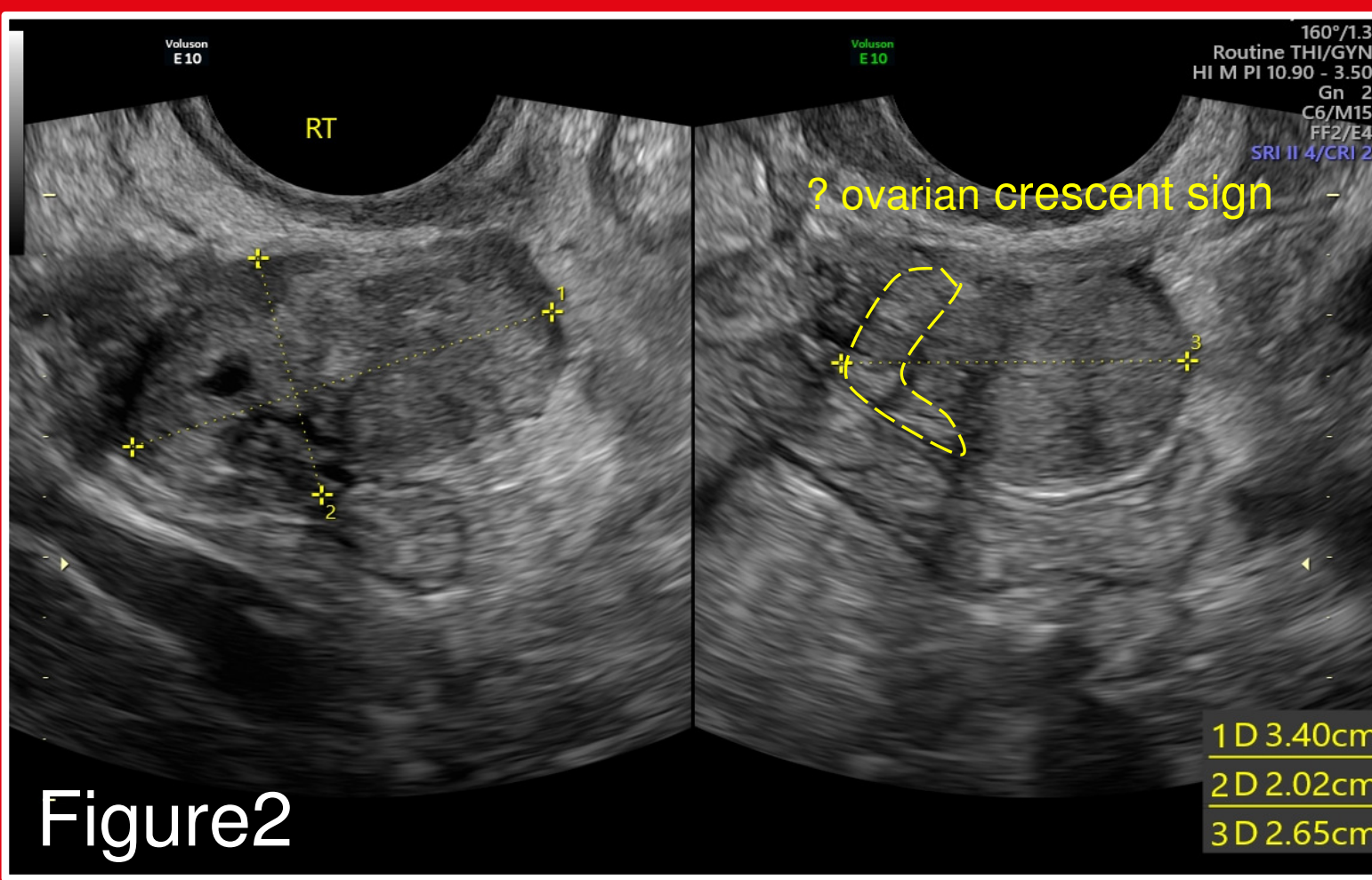


Figure 2. Grey-scale Ultrasound in Jul 2024.

The RO measured 3.4 x 2.0 x 2.7cm, appeared heterogeneous and contained a few cystic spaces. There was a probable “ovarian crescent sign”.

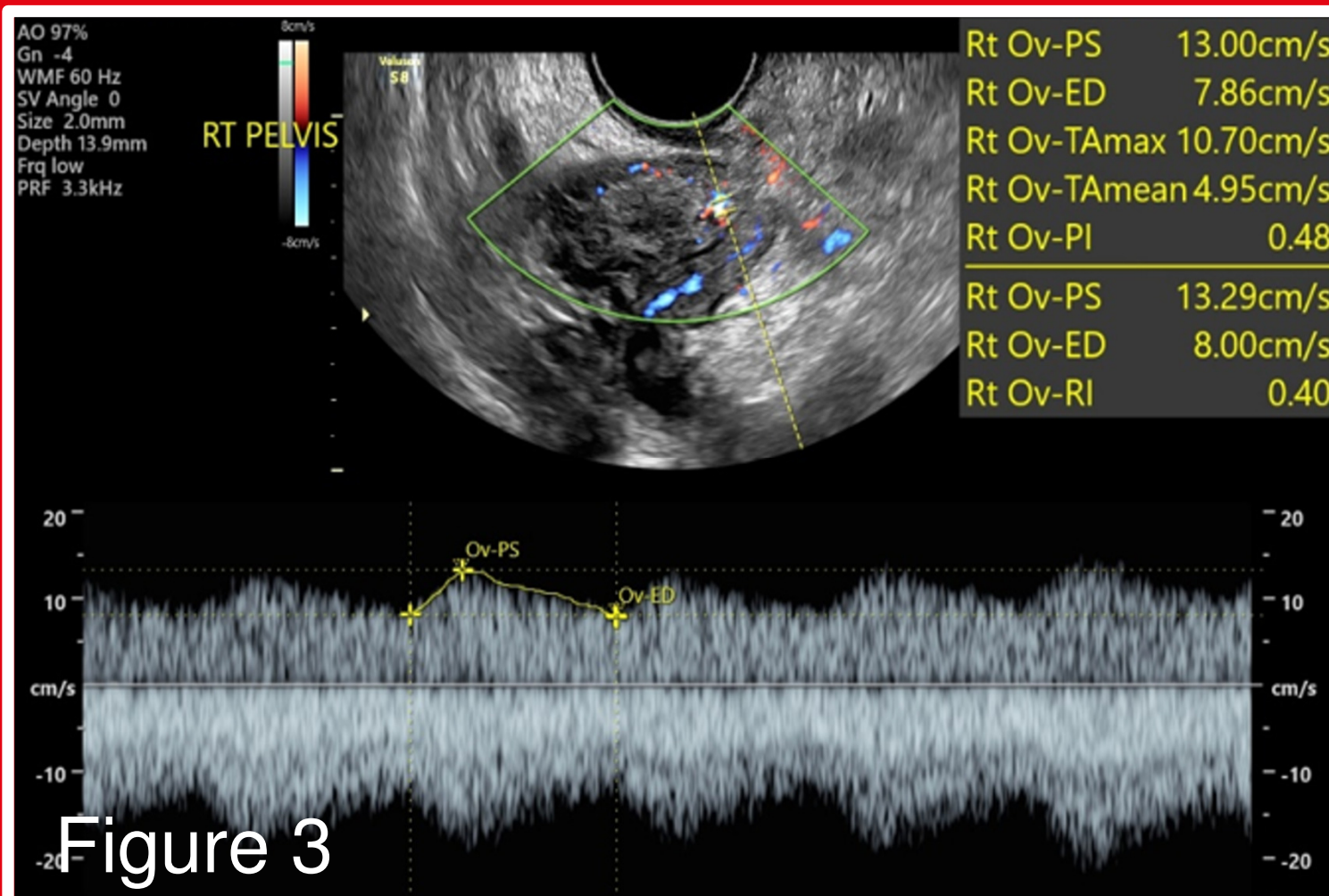


Figure3. Pulsed Wave Doppler in Jul 2024.

Low-impedance peripheral and intratumoral flow was demonstrated. PSV=13 cm/s, PI=0.48, RI=0.40. The vessels appeared to be encircling a circumscribed mass within the RO.

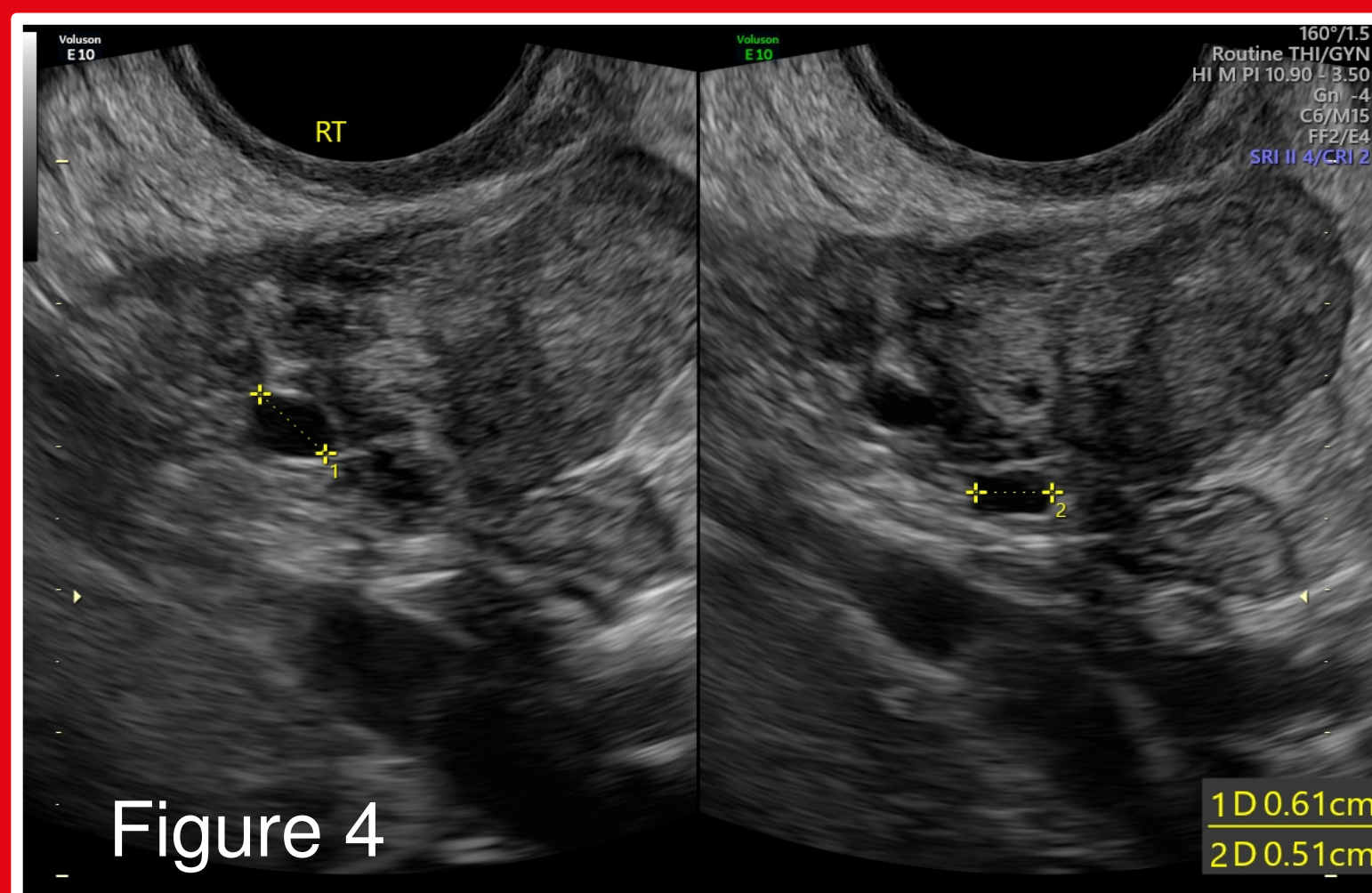


Figure 4. Grey-scale Ultrasound in Jul 2024.

A few clear cysts measuring up to 0.6 cm seen close to the solid mass, and proven to be paratubal cysts.

Adnexal Mass	
Position	unilateral, right
Origin	uncertain
Size of lesion	29 mm x 19 mm x 21 mm
Volume	6.1 cm ³
Largest diameter	29 mm
Type of lesion	solid
Size of largest solid component	29 mm x 19 mm x 21 mm
Irregular internal cyst walls	no
Papillary projections	no
Acoustic shadows	no
Presence of metastases	no
Ascites	no
Colour score	3: moderate blood flow
Echogenicity	solid
PSV	13.0 cm/s - RI 0.40 - PI 0.48
The likelihood ratio of malignancy for this mass is 31.7%.	
Reference: Timmerman et al.: Ovarian cancer prediction in adnexal masses using ultrasound-based logistic regression models: a temporal and external validation study by the IOTA group. <i>Ultrasound Obstet Gynecol</i> 2010; 36: 226–234.	

Figure 5

Figure 5. IOTA scoring in Jan 2024.

Taking the whole RO as the solid mass, the likelihood ratio of malignancy for this mass was 31.7%.

Adnexal Mass	
Position	unilateral, right
Origin	ovary
Size of ovary	29 mm x 19 mm x 21 mm
Size of lesion	22 mm x 15 mm x 21 mm
Volume	3.6 cm ³
Largest diameter	22 mm
Type of lesion	solid
Size of largest solid component	22 mm x 15 mm x 21 mm
Irregular internal cyst walls	no
Papillary projections	no
Acoustic shadows	no
Presence of metastases	no
Ascites	no
Colour score	3: moderate blood flow
Echogenicity	solid
The likelihood ratio of malignancy for this mass is 22.2%.	
Reference: Timmerman et al.: Ovarian cancer prediction in adnexal masses using ultrasound-based logistic regression models: a temporal and external validation study by the IOTA group. <i>Ultrasound Obstet Gynecol</i> 2010; 36: 226–234.	

Figure 6

Figure 6. IOTA scoring in Jan 2024.

If taking actual size of the mass from histopathology report, the likelihood ratio of malignancy for this mass would be 22.2%.

Adnexal Mass	
Position	unilateral, right
Origin	uncertain
Size of lesion	34 mm x 20 mm x 27 mm
Volume	9.6 cm ³
Largest diameter	34 mm
Type of lesion	solid
Size of largest solid component	34 mm x 20 mm x 27 mm
Irregular internal cyst walls	no
Papillary projections	no
Acoustic shadows	no
Presence of metastases	no
Ascites	no
Colour score	3: moderate blood flow
The likelihood ratio of malignancy for this mass is 39.7%.	
Reference: Timmerman et al.: Ovarian cancer prediction in adnexal masses using ultrasound-based logistic regression models: a temporal and external validation study by the IOTA group. <i>Ultrasound Obstet Gynecol</i> 2010; 36: 226–234.	

Figure 7

Figure 7. IOTA scoring in Jul 2024,

Taking the whole RO as the solid mass, the likelihood ratio of malignancy for this mass was 39.7%.

Adnexal Mass	
Position	unilateral, right
Origin	ovary
Size of ovary	34 mm x 20 mm x 27 mm
Size of lesion	22 mm x 15 mm x 21 mm
Volume	3.6 cm ³
Largest diameter	22 mm
Type of lesion	solid
Size of largest solid component	22 mm x 15 mm x 21 mm
Irregular internal cyst walls	no
Papillary projections	no
Acoustic shadows	no
Presence of metastases	no
Ascites	no
Colour score	3: moderate blood flow
Echogenicity	solid
The likelihood ratio of malignancy for this mass is 22.2%.	
Reference: Timmerman et al.: Ovarian cancer prediction in adnexal masses using ultrasound-based logistic regression models: a temporal and external validation study by the IOTA group. <i>Ultrasound Obstet Gynecol</i> 2010; 36: 226–234.	

Figure 8

Figure 8. IOTA scoring in Jul 2024.

If taking actual size of the mass from histopathology report, the likelihood ratio of malignancy for this mass would be 22.2%.