ISUOG Basic Training
Examining the Ovaries and Adnexa
Learning objectives

At the end of the lecture you will be able to:

• Use International Ovarian Tumor Analysis (IOTA) terms, definitions and measurements
Key questions

• How do I describe my ultrasound findings using the standardized (IOTA) terminology?

• How do I assess and describe vascular flow in structures in the adnexa?

• How do I measure and describe papillations in ovarian lesions?
Key points

• Understand how to use IOTA terminology

• Understand how to arrange ultrasound settings to assess vascular flow in ovarian lesions

• Understand how to measure and assess papillations in ovarian lesions
International Ovarian Tumour Analysis (IOTA)

Terms, definitions and measurement methods
Definitions

- Ovarian lesion
- Solid component
- Papillary projection – cyst wall irregularity
- Complete – incomplete septum
- Five tumor types
- Different types of cyst content
- Acoustic shadowing
- Color score
- Ascites
Ovarian lesion


Terms, definitions and measurements to describe the sonographic features of adnexal tumors: a consensus opinion from the International Ovarian Tumor Analysis (IOTA) group

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• Part of an ovary inconsistent with normal physiology
• Adnexal mass inconsistent with normal physiology
IOTA definition of a solid component

- A structure that has (high) echogenicity suggestive of tissue (myometrium, ovarian stroma, myomas, fibromas)
IOTA definition of a solid component

- The white ball in a dermoid cyst is **NOT** solid tissue
IOTA definition of a solid component

- Blood clot, amorphous material or solid tissue?
- Push on the lesion
- Use colour doppler

*If in doubt – classify as solid tissue!*
Push on the lesion
Use colour Doppler
A papillary projection is any solid protrusion into the cyst cavity from the cyst wall with a height of ≥ 3mm.

Papillary projection = solid tissue
A protrusion <3mm: cyst wall irregularity
IOTA definition of septum and incomplete septum

- **Septum** = thin strand of tissue that runs from one internal cyst surface to another

- **Incomplete septum** = thin strand of tissue that does not reach the opposite wall of the cystic structure in some scanning planes (seen in diseased tubes)
Five types of lesions

- Unilocular
- Unilocular-solid
- Multilocular
- Multilocular-solid
- Solid
Unilocular


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Definition of a unilocular cyst

- ONE cyst locule
- No septa
- No solid components
- Any type of cyst fluid
Unilocular-solid
Multilocular


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Solid


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Five types of cyst content

- Anechoic
- Low level
- Hemorrhagic
- Mixed
- Ground glass
Acoustic shadowing
Irregular cyst wall

- Irregularity in the inner wall of a cyst
- Irregularity of outer contour of a solid tumor or irregularity of the inner wall of a cystic component in a solid tumor
Color score

Subjective assessment of blood flow

1. **Color score of 1** is given when no blood flow within the septa, cyst walls, or solid tumor areas.

2. **Color score of 2** is given when only minimal flow can be detected.

3. **Color score of 3** is given when moderate flow is present.

4. **Color score of 4** is given when the adnexal mass appears highly vascular with marked blood flow.
Use of color or power Doppler
Use of Pulse Repetition Frequency (PRF)

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PRF fixed at 0.3, lower GAIN...
Ascites

- Fluid outside the pouch of Douglas
How to measure an ovary, a lesion or a solid component in a lesion

- Three orthogonal diameters
- Where the lesion/ovary/solid component appears to be at its largest
  - Maximum diameter
  - Mean diameter
  - Volume: \( (L \times D \times W \times 0.5) \)
How to measure a papillary projection

• All papillary projections are measured in two perpendicular planes: *height* and *base*
How to measure a papillary projection
Maximum diameter of largest solid component