The phrase “complex ovarian mass” is unhelpful when evaluating the ovaries on transvaginal ultrasound

Over the last 13 years, there has been a concerted effort to standardise the terms used to describe adnexal pathology when performing transvaginal ultrasound (TVS). According to the International Ovarian Tumor Analysis (IOTA) group, TVS in experienced hands is the diagnostic modality of choice

when distinguishing benign and malignant ovarian masses. Notwithstanding this, even in the most experienced hands, 10% of adnexal masses are still difficult to classify on TVS. The use of high-level TVS by experienced operators enables appropriate triaging of most adnexal masses by the clinician to:

- 1 Expectant management and rescan to confirm resolution, or
- 2 Laparoscopic intervention by benign gynaecological surgeon, or
- 3 Staging laparotomy by gynaecological oncologist.

Mathematical models using simple reproducible ultrasound characteristics have been developed which give a percentage risk for the likelihood of malignancy and these models outperform the “risk of malignancy index” (RMI). The IOTA group has also demonstrated that ultrasonography performed by experienced operators outperforms serum CA 125 measurements and the incorporation of serum CA 125 into logistic regression models or adding them to subjective impression by experienced operators in difficult to characterise ovarian masses does not improve the test performance. More recently, ultrasound based “simple rules” have been developed, which not require mathematical modeling, to identify benign versus malignant tumours. If these “simple rules” cannot be applied to ovarian masses then such women should be referred to a specialist in gynaecological ultrasound. To this day, pattern recognition of the human brain in an experienced operator is still the optimal approach to ovarian mass evaluation when using high resolution TVS.

One of the most beneficial outcomes of the IOTA group’s work has been to challenge the concept of “complex ovarian mass”. When receiving a report, which reads “complex ovarian mass”,

the clinician may be unnecessarily alarmed and in turn refer the woman for gynaecological oncology input. The last thing any reports should do is expose a pre-menopausal woman to a staging laparotomy for benign disease. The phrase “complex ovarian mass” is still used widely in Australian and New Zealand reporting and needs to be replaced by standardized terminology when describing the ovaries and classifying the appearances. When evaluating and reporting on adnexal lesions, in modern practice one should use the adapted IOTA morphological classification and refer to the structure as being one of the following: unilocular, unilocular-solid, multilocular, multilocular-solid or solid. Traditional reporting which uses traditional morphological terms like “simple” or “complex ovarian mass” can be unhelpful for the clinician when trying to decide the most appropriate course of action. The phrase “complex ovarian mass” applies to unilocular-solid, multilocular-solid or solid lesions and each has a risk of malignancy of 37.1%, 43.0% and 65.3% respectively. We should strive to improve our reporting and evaluation of adnexal masses by using accepted terms, definitions and measurements to describe the sonographic features of adnexal masses. Collaboration between centres has been the answer to achieving consensus on this and the strongest effort towards this direction has been achieved by the IOTA study. I challenge you all to not only evaluate the ovaries in a systematic way each time you perform a pelvic ultrasound scan, but more importantly adopt a method of describing what you see so that every report means the same thing to clinicians Australia and New Zealand wide.

Further reading

- 1 Timmerman D, Valentin L, Bourne TH, Collins WP, Verrelst H, Vergote I; International Ovarian Tumor Analysis (IOTA) Group. Terms, definitions and measurements to describe the sonographic features of adnexal tumors: a consensus opinion from the International Ovarian Tumor Analysis (IOTA) Group. *Ultrasound Obstet Gynecol* 2000; 16 (5): 500–5.
- 2 Bignardi T, Condous G. Ultrasound for ovarian cancer screening: are we throwing the baby out with the bath water? *Gynecol Obstet Invest* 2011; 71 (1): 41–6.