Ovarian mature cystic teratoma (MCT, dermoid cyst) is the most common benign tumor of the ovary in women during the reproductive age.1−3 The majority of ovarian MCT can be easily diagnosed by image tools, including ultrasound, computed tomography and magnetic resonance images.4,5 Among these tools, ultrasound might be one of the most powerful tools because of its convenience, its increasing advanced technology and cost-effectiveness.6,7 The typical features of ovarian MCT includes (1) Rokitansky nodule (dermoid plus), presented by shadowing echodensity,a densely echogenic tubercule projecting into the cystic lumen; (2) dot-dash sign, presented by hyperechoic lines and dots arising from hairs in different orientations within the imaging plane; (3) intratumor fat, presented by diffuse or regional high amplitude echoes; (4) tooth/calcification, presented by regional high amplitude echoes wet shadowing; (5) chemical shift artifact; (6) tuft or hair, presented by diffuse or regional high amplitude echoes; (7) intratumoral keratinoid material; and (8) the other rare features, such as palm tree-like protrusion, comet tail appearance, floating balls sign, fat-fluid/liquid—fluid level, and tip of the iceberg sign.8 Therefore, the serum markers, often useful in the assistance of diagnosis of other malignant ovarian tumors,9−11 are seldom considered in women with clinical and ultrasonographic suspicion of ovarian MCT. We are glad to learn that Dr. Yesilyurt's study published in this issue of the Journal of the Chinese Medical Association attempted to use the serum tumor markers to investigate the association between the tumor markers and tumor characteristics in young women with ovarian MCT.12

The authors retrospectively reviewed 157 women under the age of 35 who underwent laparoscopic surgery for ovarian MCT in the Zekai Tahir Burak Women's Health Education and Research Hospital between January 2012 and June 2016, to study the serum levels of CA 125 and CA 199 in the different-age populations (aged 15−25 and age 26−35).12 The results showed that serum levels of CA 199 were elevated in women aged between 26 and 35 years when the tumor size was larger than 4 cm.12 Although the finding in the current study was interesting, it needs a further discussion.

First, tumor size can be easily measured by ultrasound. Even though the tumor markers, such as serum level of CA 199 are correlated with tumor size, there is no additional clinical information for these patients with ovarian MCT. If value of this examination is low, why we should perform this examination.

Second, we totally agree with the important role of tumor size in women with ovarian MCT, since it is correlated with the increasing risk of potential complications. However, the cut-off value is never considered as a 4 cm in women with mature MCT. Two main complications of the ovarian MCT are often reported and occur in the 20% of cases, including the much more common torsion and the rare malignant transformation.4,13,14 The former risk is significantly increased, when tumor size of the ovarian MCT ranged from 5 to 10 cm (or from 6 to 8 cm).4 The latter risk is not so clearly correlated with tumor size, although reports showed the possible correlation between the larger tumor size and the higher risk of malignant transformation.13 By contrast, age might be a more important predictive factor for malignant transformation of ovarian MCT.13 Therefore, it is of no use if the positive correlation between CA 199 levels and tumor size of ovarian MCT can not be established, as shown by the current study of Drs. Yesilyurt and colleagues.12 We could not find the clear and positive correlation between the tumor size and serum levels of CA 199 in their study. Receiver operating characteristic analysis might be needed to show the diagnostic sensitivity and specificity.

Although the value of serum levels of CA 199 in women with ovarian MCT is controversial, which is also shown by the authors,12 a recent study showed the combined measurement of CA 125, CA 199 and neutrophil-to-lymphocyte ratio might be useful for the diagnosis of ovarian MCT with torsion.15 The diagnostic sensitivity was 93.9% and the specificity was 98.3%.15 However, torsion of the ovarian MCT is often accompanied with the apparent symptoms and signs, which results in the easy diagnosis by clinical presentation and ultrasound findings. It is doubtful the need of serum tumor marker test for women with ovarian MCT who are suspected with torsion.

In conclusion, studies might show the scientific value, as shown in Dr. Yesilyurt's current study12; however, the value for clinical practice is low, since we can use the more powerful and economic tool to evaluate the diseases. We do not recommend the need to test serum levels of CA 199 in women.
with ovarian MCT in routine clinical practice, since no additional information is obtained to help us to make a decision in the management of women, such as those with age below 35 years, with ovarian MCT.

Conflicts of interest

The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

Acknowledgments

This article was supported by grants from the Ministry of Science and Technology, Executive Yuan (MOST 103-2314-B-010-043-MY3 and MOST105-2325-B-002-024), and Taipei Veterans General Hospital (V105C-096; V106C-129; V106D23-001-MY2-1; and V106A-012).

References


Fa-Kung Lee
Department of Obstetrics and Gynecology, Cathay General Hospital, Taipei, Taiwan, ROC

Huann-Cheng Horng
Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

Peng-Hui Wang
Department of Obstetrics and Gynecology, National Yang-Ming University, Taipei, Taiwan, ROC

*Corresponding author. Dr. Peng-Hui Wang, Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, 201, Section 2, Shi-Pai Road, Taipei 112, Taiwan, ROC.

E-mail addresses: phwang@vghtpe.gov.tw, pongpongwang@gmail.com, phwang@ym.edu.tw (P.-H. Wang).