Are the ESHRE/ESGE criteria of female genital anomalies for diagnosis of septate uterus appropriate?

Sir,

We are following with interest the European Society of Human Reproduction and Embryology/European Society for Gynaecological Endoscopy (ESHRE/ESGE) initiative to create a new classification of female genital tract congenital anomalies (Grimbizis et al. 2013). We applied the European criteria routinely using three-dimensional (3D) ultrasonography, while simultaneously classifying our patients based on the American Society for Reproductive Medicine (ASRM) criteria (Buttram et al. 1988), complemented by additional common morphometric criteria used to differentiate septate, bicornuate and arcuate uteri (Bermejo et al. 2010, Ludwin et al. 2013).

We encountered three problems: (i) practical adaptation of the ESHRE–ESGE classification criteria for septate uterus diagnosis, (ii) an increased frequency of septate uterus diagnoses and all uterine congenital anomalies according to the ESHRE–ESGE compared with the ASRM classification (because a septate uterus was diagnosed in cases where uteri fulfilled previous morphometric criteria for arcuate and in some cases normal uteri) and (iii) potentially important clinical implications of the new classification. We believe that application of ESHRE–ESGE criteria may cause difficulties because (i) the thickness of the uterine wall as the reference value for the septate uterus diagnosis may vary in different regions of the uterus. Thus, it is important to determine where and how it should be measured and (ii) the original definition of septate uterus is an abnormally shaped uterine cavity. The ratio of myometrial thickness to the size of the internal fundal indentation may not reflect the actual anatomical relationships in the uterus and lead to false diagnoses (Fig. 1). Another drawback of the relative criteria is that they are not compatible with endoscopic techniques since myometrial thickness cannot be assessed.

The application of the ESHRE/ESGE criteria may have serious clinical implications. The diagnosis of uterine septum on the basis of relative ESHRE/ESGE criteria is not supported by retrospective results and prospective studies of corrective surgery. This applies to eligibility for hysteroscopic metroplasty of patients with recurrent miscarriages who have a small internal fundal indentation; the proposed treatment may not improve obstetric results. A more serious concern is that prophylactic metroplasty may be performed in these cases prior to assist reproductive technology procedures. Additionally, the new classification may affect the assessment of anatomical results of corrective surgery, which could result in frequent repeat procedures, possibly without any significant effect on reproductive performance. This might affect the decision to re-operate in cases where previous retrospective studies suggested no indication for complementary metroplasty (residual septum

**Figure 1** ESHRE/ESGE criteria for diagnosis of septate uterus; in a uterus with a thin myometrium and concave (a) or flat (b) external contour of the fundus, even a small internal fundal indentation is diagnosed as a uterine septum; in uteri with excessively thick walls or large external convexity (c) of uterine fundus, even substantial partitioning might not be diagnosed as septum. (ESHRE, European Society of Human Reproduction and Embryology; ESGE, European Society for Gynaecological Endoscopy.)
< 1 cm) and may lead to a thin absolute myometrium that could cause future pregnancy complications.

It is worth considering whether the new classification should implement the length of the internal fundal indentation in relation to the length of the non-partitioned region of the uterus as a relative criterion for the diagnosis of uterine septum. We believe that diagnosis of uterine septum according to the ESHRE/ESGE criteria in females with low absolute internal fundal indentation (< 1.5 cm) should be considered carefully as an indication for surgery, and would be more applicable to clinical trials than routine practice. It appears that the structure of the new classification is flexible enough to allow for changes in diagnostic criteria based on the results of future studies.

Conflict of interest
None declared.

References

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Reply: Are the ESHRE/ESGE criteria of female genital anomalies for diagnosis of septate uterus appropriate?

Dear Sir,

We would like to thank Ludwin et al. (2014) for their comments on the recently published European Society for Human Reproduction and Embryology/European Society for Gynaecological Endoscopy (ESHRE/ESGE) Classification of female genital anomalies (Grimbizis et al. 2013). It is notable that according to the American Fertility Society (AFS) classification arcuate uterus is a ‘form of partial septate uterus’ that ‘behaves benignly’ American Fertility Society; Committee for Mullerian Anomalies (1998). However, where is the anatomical landmark between septate and arcuate uterus? The absence of a clear definition is one of the major drawbacks of the AFS classification system that created a lot of confusion in their diagnosis, in the assessment of their clinical importance and, finally, in the management of female genital anomalies (Grimbizis and Campo, 2010).

In the absence of accurate definitions, diagnosis is subjective and, as far as we know, there are no ‘European criteria’ for the diagnosis of female genital anomalies ‘with the use of three-dimensional (3D) ultrasound (US)’. Ludwin et al. (2013) support the option that only indentations covering >50% of the uterine cavity could be considered as septate uterus; however, it is unclear if smaller indentations covering, for example, one-third of the uterine cavity, are clinically significant or not according to these criteria as arcuate uterus? On the other hand, the criteria used by Bermejo et al. (2010) are not at all the same as those of Dr Ludwin and colleagues, whereas, Gubbin et al. (2009) described in detail all possible options for septate and arcuate uterus questioning the very simplified and, totally subjective, definition used by Dr Ludwin and colleagues. Moreover, Troiano and McCarthy (2004), trying to elucidate the ‘dark’ area of differential diagnosis between bicornuate, septate and arcuate uterus, gave another very interesting and anatomically objective option. Actually, this continuing debate was one of the reasons for the development of the new classification system (Grimbizis and Campo, 2010; Grimbizis et al. 2012).

The thickness of the uterine wall as the reference value for the diagnosis of both septate and bicornoreal uteri may, indeed, vary in different regions of the uterus. ESHRE and ESGE, based on the new classification, are working in the field of diagnosis and will provide recommendations for the diagnostic work-up of female genital anomalies. Meanwhile, the mean thickness of the anterior and posterior wall in 2D or 3D US could be used as the reference point. It is also correct that myometrial thickness cannot be easily assessed with endoscopic techniques but it could be measured easily with ultrasound techniques; an objective and not subjective reference point. However, it should not be ignored that according to AFS classification the detection of anomalies is based only on the subjective impression of the clinician performing the test (Woelfer et al. 2001).

Concerning the provided hypothetical cases: Fig. 1a; if the external indentation is >50% of the uterine wall thickness then it is a bicornoreal and not a septate uterus. In this case, if the thickness at the fundal midline level is >150% of the uterine wall thickness it is sub-categorized as bicornoreal septate uterus and partial correction is feasible but not always necessary; if it is <150% it is categorized as partial bicornoreal and treatment is not feasible, nor necessary. If the external indentation is <50% and the internal indentation >50% of the uterine wall thickness then it is partial septate uterus and the thickness at the fundal midline is never thinner than the mean uterine wall thickness. Fig. 1b and c; having in mind the reference point and definitions given before, these are clearly septate uterus although Case 1c does not seems to be realistic.

The ESHRE/ESGE classification has tried to objectively categorize female genital anomalies and it should be used as a guide for their diagnosis. The underlined risk of over-treatment seems to be a problem