



## Welcome Editorial Advances in Gynaecological Ultrasound

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### Editorial

It gives me great pleasure to welcome our readers to an exciting issue of JBR Journal of Clinical Diagnosis and Research to start the New Year.

The related articles on Advances in Gynecological Ultrasound will include screening and diagnosis of mullerian congenital anomalies, screening and diagnosis of uterine cancer, menopause and ultrasound in infertility.

Many debates surrounded the most appropriate approach of mullerian anomalies diagnosis. In congenital uterine anomalies 3D ultrasound is critical in reaching the correct diagnosis, by means of assessing the coronal plane of the uterus. Canalization defects reduce fertility and increase rates of miscarriage and preterm delivery. Unification defects seem to preserve fertility, but some are associated with miscarriage and preterm delivery. Arcuate uteri seem associated with second-trimester miscarriage. All uterine anomalies increase the chance of fetal malpresentation at delivery [1]. However, before the routine use of 3D scanning for uterine anomalies can be recommended, research should be dedicated to reproducibility of the diagnosis of uterine abnormalities, to the reproductive risk associated with an incidental diagnosis of congenital uterine anomaly, and to the true prevalence in general population, not known yet. 3D transvaginal ultrasound represents a new dawn for those of us who, in practicing gynaecological ultrasound, have become reliant on invasive procedures, like hysterosalpingography, laparoscopy and hysteroscopy, all underperforming if compared to ultrasound. Very few studies published so far have included a formal assessment of diagnostic reproducibility. There is no agreement on the criteria to diagnose different types of anomalies in 3D. The need to address this issue is clearly illustrated by the large variation in the prevalence of uterine anomalies between different studies using three-dimensional ultrasound.

Thus, 3 DUS represents the most major development in ultrasound imaging, providing a unique, very different and clear way of displaying ultrasound data in gynecology, and the option of 3D TV imaging should be integrated in all US machines.

Guidelines recommend a cut-off value of 4 or 5 mm by transvaginal ultrasonography, below which endometrial cancer is unlikely. In contrast to the clear guidelines on the management of women with postmenopausal bleeding, we are faced with uncertainty when we measure the endometrial thickness in asymptomatic postmenopausal women. Symptom-free women may undergo transvaginal ultrasonography for other indications. It is not known how best to manage patients in whom a thick endometrium is observed incidentally. Recent research does not justify the use of endometrial thickness as a screening test for endometrial carcinoma [2]. Thus, new parameters should be proposed. Recently, it was shown that new

ultrasound-based models can predict high-risk endometrial cancers with good accuracy, better than previously developed models [3].

A robust quality assurance program can improve visualization of postmenopausal ovaries and is an essential component of ultrasound-based ovarian cancer screening trials. While visualization rate should be adjusted for non-subjective factors that impact on ovarian visualization, subjective factors are likely to be the largest contributors to differences in visualization rate [4]. Thus, operators' skills should be improved and the examination technique should probably be standardized.

The results of 2D and 3D ultrasound showed recently similar moderate agreement with magnetic resonance imaging (as the gold standard) in the assessment of parametrial infiltration of cervical cancer. 2D and 3D ultrasound examinations are less costly and more readily available than MRI, and should be considered in the preoperative work-up for cervical cancer [5].

Ultrasound is paramount in investigating sterile/infertile couples. Enhancing the amount of information with sonohysterography and ambulatory mini-HSK is the step forward, since they can provide additional information, especially in cases with associated endometrial focal lesions. Hysterosalpingo-contrast-sonography (HyCoSy) is a safe and reliable alternative to the conventional hysterosalpingography, using no radiation or iodinated contrast material. These techniques offer information on the tubal patency also [6]. The association of clinical exam, 3D transvaginal ultrasound and sonohysterography may be seen as the gold-standard investigation in infertile/sterile woman.

Ultrasound technology is the field where the most major advances were registered in recent years, and now includes applications such as 3-dimensional volume imaging, real-time evaluation of pelvic organs (simultaneous with the physical examination), and Doppler blood flow mapping without the need for contrast, which makes ultrasound imaging unique for imaging the female pelvis.

Not only is advanced gynecological ultrasound a reality today, but the implications of this technology for the clinical management of gynaecological cases are considerable and far-reaching. It is for this reason that JBR Journal of Clinical Diagnosis and Research will make every effort to attract and publish work on this field, for the benefit of our readers.

We set ourselves the challenging task of both improving the academic quality of the Journal and keeping a reduced interval of manuscripts awaiting publication. This implies the hard work, dedication and determination of our Reviewers, Editors and Editorial Staff.

The Journal will try to deliver a periodic systematic or narrative review, given their clinical and academic relevance. In all ultrasound journals there is a significant obstetric bias. This is why the JBR Journal

of Clinical Diagnosis and Research will encourage gynecology submissions in the following period, especially in the fields of mullerian anomalies and ultrasound in oncology.

We hope that the Journal will become an important resource to researchers and trainees alike. I would like to thank our readers and would welcome their opinions and thoughts about our Journal.

We are willing to publish original contributions (research and review articles, case reports, and letters to the editor) on gynecology ultrasound.

All these should reflect in improving the clinical diagnostic, interventional and therapeutic applications, and in cross-sectional diagnostic imaging. Among them, ultrasound is the most informative, the less invasive, and the less expensive modality.

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