Ultrasound: new techniques and imaging in iatrogenic conditions

August's issue represents a new dawn for the AJUM. This is the first time the AJUM has been filled from start to finish with original scientific work. This represents a significant move towards eventual Medline listing. The Editorial Board is pleased to present seven original manuscripts in total which present on an array of subjects including saline sonovaginography to measure the rectovaginal septum, ultrasound to classify Asherman's syndrome, dermoid cysts of the ovary and caesarean scar defects as well as cases of caesarean section scar ectopic pregnancies (CSEPs).

Shannon Reid follows her recent publication in May's issue of the AJUM in which she described the use of real-time sonovaginography to not only detect posterior compartment deep infiltrating endometriosis (DIE) but also predict pouch of Douglas (POD) obliteration; both ultrasound findings often overlooked with convention transvaginal ultrasound. In this issue she describes the use of intra-operative saline sonovaginography to define the rectovaginal septum in women with suspected rectovaginal endometriosis. In this pilot study, the rectovaginal septum was measured in three points in the mid-sagittal plane (retrocervical area, at the middle third of the posterior vagina and just above the perineal body). Although the numbers were small in this pilot study, there was no significant difference in the thickness of the rectovaginal septum in the three points of interest in women with and without rectovaginal DIE. The best sonographic marker for posterior compartment DIE was the presence of a hypoechoic lesion.

In the paper by Dickie, *et al*, they evaluated the completeness and quality of referral letters sent to their Fetal Medicine Unit (FMU). They clearly demonstrated that relevant medical information was indeed missing from referral letters sent to the FMU in 57% of cases. Their study also showed that a patient questionnaire was significantly better at highlighting additional pregnancy risk factors compared to the referral letter.

In the descriptive paper by Tan and Robertson, they discuss the role of ultrasound and in particular saline infusion sonohysterography (SIS) along with hysterosalpingography (HSG) in the investigation of women with Asherman's syndrome. For the identification of intra-uterine adhesions, SIS is as good or superior to HSG. 3D transvaginal ultrasound can potentially provide additional information on the location and extent of intra-uterine adhesions. Although imaging plays a greater role in the work-up of women with potential Asherman's syndrome post curettage, larger studies are needed to fully evaluate the predictive power of SIS.

Kite and Uppal present a case report of a 41 year old woman who had an hCG-secreting dermoid cyst of the ovary. They carefully describe the grey-scale ultrasonographic appearances which are classically seen in dermoid cysts of the ovary. Transvaginal sonographic pattern recognition by experienced operators holds the key not only to the accurate classification of dermoid cysts of the ovary pre-operatively. This approach is the optimal way to distinguish benign and malignant adnexal masses.

The last three articles in August's issue discuss caesarean section (CS) scar defects and caesarean section scar ectopic pregnancies (CSEPs). CS scar defects are seen in up to 19% of women following lower segment caesarean section. Jane Fonda clearly describes how transvaginal ultrasound, with or without saline, is the imaging modality of choice to delineate such defects. The two case reports by Ebner, *et al* and Debra Paoletti focus on the rare but increasingly prevalent CSEP. Although rare, ectopic pregnancy in a previous caesarean section scar is seen in 1:1800 to 1:2216 pregnancies. CSEPs account for 6% of ectopic pregnancies among women who have had a previous caesarean section. Early diagnosis using transvaginal ultrasound holds the key for early intervention in these pregnancies, which have the potential to develop into aggressive forms of anterior placenta praevia. Currently there is no consensus on the management of women diagnosed with a CSEP. Medical, surgical and even interventional radiological approaches have been described in the literature. I think the challenge in modern practice is not making the ultrasound diagnosis of CSEP but rather deciding whether ALL CSEPs do need to have intervention as advocated by tertiary referral Early Pregnancy Units. My unit advocates the use of transrectal ultrasound guided surgical evacuation of the CSEP. Can we manage some CSEPs expectantly, i.e. allow these pregnancies to develop without intervention? Surely there must be some CSEPs which are relatively benign in their development and do not represent a grave risk to both mother and fetus?

This issue showcases a new sonographic technique as well as the use of ultrasound in iatrogenic conditions. I hope you enjoy the time and effort put in by both authors and reviewers. Please feel free to write "Letters to the Editor" in response to the works presented in this issue of the AJUM.

Assoc Prof George Condous
Editor