Do specific weight formulas for fetuses ≤ 1500 g really improve weight estimation?
Hoopmann M, Bernau B, Hart N, Schild RL, Siemer J. *Ultraschall in Med* 2010; 31 (1): 48–52

The short answer to the question in the title of this paper from Germany is “No”.

We probably all know that fetal weight estimation is an error prone exercise especially in the small or large for dates fetuses. But because fetal weight, in addition to gestational age is an important predictor for neonatal morbidity and mortality in very small fetuses, the authors compared six equations widely used to estimate it. 459 pregnancies were studied.

The Hadlock formulas (BPD, HC, AC, FL or BPD, AC, FL) first published in 1985 were the most accurate of the 10 formulas studied. This is reassuring as most units rely on Hadlock.

Umbilical artery Doppler indices in small for gestational age fetuses: correlation with adverse outcomes and placental abnormalities
Dicke JM, Huettner P, Yan S, Odibo A, Kraus FT. *J Ultrasound Med* 2009; 28 (12): 1603–10

While on the subject of small fetuses this study from St Louis Missouri compared the screening efficiency of the umbilical artery (UA) systolic to diastolic ratio (S/D) pulsatility index (PI) and absent end-diastolic flow (AEDF) for adverse pregnancy outcomes and placental abnormalities in small for gestational age (SGA) fetuses.

This was a retrospective study of 161 SGA fetuses of when 80 had S/D ratio and PI studies. Both SD and PI assessments were equally reliable. But as might be expected the major morbidities were a function of prematurity and not constantly predicted by abnormal umbilical artery Doppler studies, regardless of whether end-diastolic flow was present or not. But we still need to alert the clinicians about abnormal UA Doppler results as they usually occur before overt fetal impairment.

Echogenic intracardiac foci. Associated with increased risk for fetal Trisomy 21 or not?
Shanks AL, Odibo AO, Gray DL. *J Ultrasound Med* 2009; 28 (12): 1639–43

An important question as these echogenic intracardiac foci (EIF) are often seen at the morphology scan and in the 1990s it was suggested there was an association with Trisomy 21. A meta-analysis in 2003 reported that up to 30% of fetuses with Trisomy 21 had an EIF compared with between 4 and 7% of normals. But, recent evidence has suggested otherwise. So far we coalface workers – which do we believe?

These authors, again from St Louis Missouri set out to review retrospectively their 16-year experience with 62,111 pregnancies referred for ultrasound and genetic evaluation by fetal morphology scan at 18–20 weeks.

And their conclusions?
1 Regardless of maternal age, a low risk of Trisomy 21

on serum screening should not be altered when an EIF is found.
2 Patients younger than 35 with an increased risk of Trisomy 21 based on serum screening and an isolated EIF do not need their risk changed. So an isolated EIF in any patient with a first trimester low risk screen is not an indication for amniocentesis but should prompt a careful anatomical survey at the morphology scan.

Sonographic measurements of the fetal fastigium between 20 and 40 weeks gestation
Tepper R, Kidron D, Hershkovitz R. *J Ultrasound Med* 2009; 28 (12): 1657–61

The fetal what? I hear you ask! Well, apparently a fastigium is a gable end, a plinth or for our purposes, the highest part in the roof of the fourth ventricle. So now we know what they were studying why is it important? Well if the thin roof plate of the fourth ventricle is in place and there is a posterior fossa cyst as in the Dandy-Walker malformation, the progress may be better than if the fastigium is displaced. The authors studied 505 pregnant women between 20 and 40 weeks. Using transabdominal and transvaginal ultrasound in the mid sagittal plane of the brain they fastidiously measured the angle of the fastigium!

They conclude that the fastigial angle is constant (between 30° and 60°) throughout pregnancy. The article has nice pictures too. So this information might be helpful in assessing subtle anomalies of the posterior fossa.

Diagnosis of gastric varices and evaluation of the effectiveness of treatment using transabdominal color Doppler ultrasonography
Sato T, Yamazaki K, Akaike J *J Ultrasound Med* 2009; 28: 1125–31

This study reviewed the colour Doppler findings in 41 patients with known gastric varices and portal hypertension. The authors reported a high sensitivity for detection which may have reflected the cohort BMI (< 25 in all subjects) and/or bias because of referral patterns or the non-blinded nature of the reviewers. They find that the majority of varices flowed from the stomach and had a non turbulent monophasic venous signal. Due to the study design it’s a little difficult to ascertain how useful this is.

In my own practice, varices tend to be more prominent around the splenic hilum and kidneys. Also, the presence of a recanalised paraumbilical vein is a useful finding; Japanese patients seem to have lower BMIs which might have made detection of gastric varices a little easier.

Comparison of sonography and scintigraphy in the evaluation of gallbladder functional studies with cholecystokinin
Barr RG, Kido T, Grajo JR *J Ultrasound Med* 2009; 28: 1143–7.

I was excited to be given the opportunity to review this article; chronic right hypochondrial pain is a relatively common...
entity and can represent a diagnostic dilemma. Traditionally, the nuclear medicine technique with CCK infusion has been reasonably popular and may stratify patients into those with chronic cholecystitis and those without. In this study, the authors directly compared ultrasound and nuclear medicine findings in a group of 20 volunteers. They measured gallbladder volume \((0.523 \times \text{height} \times \text{width} \times \text{length})\) immediately before the CCK infusion was started and then at 5 minute intervals. The authors found a reasonable correlation between the two modalities, with the US generated result being a little higher. The data suggest a potential role for ultrasound, although its reproducibility in patients needs further investigation.

**Hepatic vein morphology: a new sonographic diagnostic parameter in the investigation of cirrhosis?**

Vessal S, Naidoo S, Hodson J, Stella DL, Gibson RN
*J Ultrasound Med* 2009; 28: 1219–27.

US is often used in patients with suspected cirrhosis with a variety of potential clues. In this study, the authors examined whether hepatic vein morphology could be useful. Subjects were recruited from Royal Melbourne Hospital and included 97 patients with and without cirrhosis. The authors hypothesised that intrahepatic nodularity would distort the outline of intrahepatic veins (less straight) and produce irregularities in the wall echogenicity. These correlated with a clinical diagnosis of cirrhosis and also showed good intra- and interobserver reproducibility. The study had some limitations, but their results are promising and worth checking out.

**Post traumatic painful hip: sonography as a screening test for occult hip fractures**

Safran O, Goldman V, Applbaum Y, Milgrom C, Bloom R, Peyser A, Kisselgoff D
*J Ultrasound Med* 2009; 28: 1447–52

Older patients with post traumatic hip pain and negative x-rays can present a dilemma. Usually, radionuclide bone scans can help, but in this series from Israel, the authors examined the role of ultrasound. They examined 30 subjects and correlated US with MRI. Using a “cortical breach or step-off deformity” or adjacent soft tissue contusion or joint effusion, they were able to diagnose all hip fractures, but missed some pelvic rami fractures and also had some false positives. Interesting work, but may not find much appeal, especially if you work near a nuclear medicine department.

**The cavum septi pellucidi why is it important?**

Winter TC, Kennedy AM, Byrne J, Woodward PJ
*J Ultrasound Med* 2010; 29: 427–44.

This is a nicely written review of disorders of the cavum septum pellucidum, normal variants and a series of good ultrasound and MRI images. If you work in obstetrics and/or neonatal medicine it’s well worth a read.

**Striated appearance of the testes**

Loberant N, Bhatt S, McLennan GT, Dogra VS
*Ultrasound Q* 2010; 26: 37–44

If like me you’ve ever wondered about testes with vertically oriented hypoechoic bands causing a “striated” appearance, well here is the definitive review article. As well as describing differential diagnoses such as tubular ectasia, orchitis and transtesticular arteries, the authors show that advancing age leads to morphologic changes in the seminiferous tubules which in turn cause the striations. It’s well written with great images and correlative histology.

**Pears and pitfalls in hepatic ultrasonography**

Shin DS, Jeffrey RB, Desser TS
*Ultrasound Q* 2010; 26: 17–25

Again a well written review on an organ that many of us spend lots of time looking at. The authors highlight a variety of tips including the role of “edge shadowing” in distinguishing tumour from nodular regeneration, monophasic flow in the hepatic veins and deep surface nodularity.

**The use of contrast enhanced ultrasound in carotid arterial disease**

Shallhoub J, Owen DRJ, Gauthier T, Monaco C, Leen ELS, Davies AH
*Eur J Vasc Endovasc Surg* 2010; 39: 381–7

There is a growing realisation that the degree of stenosis on standard carotid ultrasounds is a relatively poor predictor of future stroke in asymptomatic patients. As well, we may miss important information about plaque status. In this review article, the authors show that assessment of plaque biology is not only possible with the use of contrast agents, but potentially adds unique information to the overall examination. Their review is well balanced, since it also addresses unanswered questions about measurement parameters and potential side-effects.