Scanning the journals

**On the accuracy of prenatal 3D ultrasound of cleft hard palate when cleft lip is present**
Bäumler MA, Faure JM, Bigorre M, Bäumler-Patris C, Boulot P, Demattei C, Captier G. *Ultrasound Obstet Gynaecol* 2011 Jan 12 Epub.

Of 79 cases with prenatal diagnosis of uni or bilateral cleft a correct diagnosis using axial 3D scanning was made in 77. All cases were verified at birth. The sensitivity of detection was 100% and the specificity 90%.

It appears that 3D scanning in the right hands is highly accurate in predicting the presence or absence of cleft palate when cleft lip is present.

**First trimester screening: dealing with the fall out**
Fisher J. *Prenat Diagn* 2011; 31 (1): 46–9

This thoughtful article reminds us that we need to recognise and acknowledge the adverse side effects of anxieties stemming from the finding of an ultrasound marker of possible fetal anomaly. While the vast majority of women are reassured by early screening for a small number we create a great deal of anxiety especially when the antenatal findings are equivocal.

**The prenatal diagnosis of genetic diseases**
Wieacker P, Steinhard J. *Dtsch Arztebl Int* 2010; 107 (48): 857–62

Every so often it is a good idea to read a short comprehensive review of an area in a specialty allied to our daily work. This is one such article in a journal you might never normally come across. Written by experts from the reputable centre in Münster, it is well worth going online for and it is free. Your genetics colleagues will also be glad you have made the effort.

**Magnetic resonance imaging of the fetus**
Jokhi RP Whitby EH. *Dev Med Child Neurol* 2011; 53 (1): 18–28

And speaking of review articles in journals we might not normally read, here is an excellent one on the use of MRI. The authors emphasise the need for caution in interpretation of fetal images especially where experience is limited. We have found that ultrasound is still in many cases the best imaging technique for fetal anomaly diagnosis.

**The clinical impact of fetal magnetic resonance imaging on management of CNS anomalies in the second trimester of pregnancy**
Amini H Amini H, Axelsson O, Raiend M, Wikström J. *Acta Obstet Gynaecol Scand* 2010; 89 (12): 1571–81

This is a small retrospective study of 29 pregnant women with a suspected fetal anomaly. In 16, the ultrasound diagnosis was confirmed but MRI added no additional information. In 10, MRI did provide additional knowledge of the anomaly but this did not affect clinical management. In only three cases (10%) was MRI effective in changing management and in two of these the patient was obese. The authors reasonably conclude that fetal MRI might be a clinically valuable adjunct to ultrasound for CNS anomaly evaluation especially when obesity has rendered the ultrasound findings inconclusive.

**Can preoperative axillary US help exclude N2 and N3 metastatic breast cancer?**
Neal CH, Daly CP, Nees AV, Helvie MA. *Radiology* 2010; 257: 335–41.

Previously, axillary lymph node dissection was used as a staging tool for patients with breast carcinoma, but post-operative complications of wound collections, pain and lymphoedema have stimulated alternative methods for staging. Nuclear medicine lymphoscintigraphy has been used to help identify the sentinel lymph node, but data suggest that 40–60% of subjects with a positive sentinel node have no other nodal disease. Hence, the reason for this research. In this retrospective study, the authors examined 435 patients who underwent US prior to surgery and were able to exclude N2 and N3 metastases in 96% of patients with invasive ductal carcinoma; the false negative rate was a little higher in other cancer types however. Nevertheless, the work is valuable because it suggests a potential supplementary role for US in staging patients with invasive ductal cancer.

**Learning curve of emergency physicians using emergency bedside sonography for symptomatic first-trimester pregnancy**
Jang TB, Ruggeri W, Dyne P, Kaji AH. *J Ultrasound Med* 2010; 29: 1423–28.

Like many of you, I’ve been watching with interest the growing incorporation of diagnostic ultrasound by anaesthetists, emergency department (ED) clinicians and other physicians into their respective practices. Various training programs, including ASUM’s CCPU have been developed as a means of helping folk without a traditional diagnostic imaging background. In this report, the authors prospectively compared the diagnostic accuracy of ED generated ultrasound reports with those acquired later in radiology. A total of 670 patients were studied and the authors showed that the sensitivity for detection of an intrauterine pregnancy and adnexal mass improved appreciably after 40 examinations, although the false negative rate for the latter remained relatively high (~10–15%). The study highlights several important themes for those of you in the business of ultrasound training. First, numbers are important; second and more important is that the educational experience is embellished by positive findings, that is to say that people need to see pathology, not just normal stuff. Third, the operator dependent nature of ultrasound indicates a continued role for the traditional master-apprentice type approach.
Cystic thyroid nodules after aspiration mimicking malignancy-sonographic characteristics.
Koo JH, Shin JH, Han BK, Ko EY, Kang SS. J Ultrasound Med 2010; 29: 1415–21.

I don’t know why, but most times I see an article on the thyroid the authors turn out to be Korean. Maybe there’s something about the diet over there? In any case, in this study the authors asked themselves what happens to the ultrasound appearance of cystic thyroid nodules after they’ve been aspirated. The mean interval between biopsy and ultrasound assessment was 26 months. Interestingly, they showed that many nodules featured a suspicious appearance post biopsy: 43% had a taller-than-wide-shape, 24% had an irregular shape, 58% had an ill-defined margin and 64% had non-shadowing echogenic foci, mimicking microcalcification. So, next time you do a thyroid ultrasound and see something suspicious, remember to ask your patient if they’ve had a FNA and how long ago this was. It might keep you out of trouble.

Ultrasound detection of rotator cuff tears: observer agreement related to increasing experience.
Rutten MJCM, Jager GJ, Kiemeney ALM. AJR 2010;195: W440–46.

A few years ago, I made the mistake of sitting in on a lecture delivered by an orthopaedic surgeon who bemoaned, among other things, the poor interobserver reproducibility of ultrasound for rotator cuff tears. In this study, two Dutch radiologists, one experienced in musculoskeletal (MSK) and the other with no specific experience in MSK compared findings in 200 shoulders of 183 patients. Of the subjects studied subsequently, 71 had surgical correlation and in this subgroup there was remarkably good agreement between the two observers. So, the idea that diagnostic accuracy for shoulder ultrasound is related to expertise might be bunkum.

Correlation of hepatic vein Doppler waveform and hepatic artery resistance index with the severity of nonalcoholic fatty liver disease.
Mohammadinia AR, Bakhtavar K, Ebrahimi-Daryani N, Habibollahi P, Keramati MR, Fereshtehnejad SM, Abdollahzade S. J Clin Ultrasound 2010; 38: 346–52.

In the aftermath of Wikileaks it’s pleasing to see that not everything coming out of Iran is bad news. These authors correlated Doppler indices in the intrahepatic veins and hepatic artery with severity of fatty infiltration on biopsy in 60 patients and compared to 20 healthy volunteers. Fatty liver (or non alcoholic hepatic steatosis to give it its technical name) is increasingly being recognised in Australia as a manifestation of the metabolic syndrome. Hence, studies which help us understand its prevalence and severity are welcome. The authors used a 3.5MHz probe and the majority of their subjects weighed < 100 kg, so this could be an important factor limiting the generalisability of their data. Nevertheless, they showed that as the severity of fatty infiltration increased the likelihood of obtaining monophasic flow in the hepatic veins increased; in addition, vascular impedance as measured by the hepatic artery resistive index also increased, thus suggesting reduced liver compliance. Their discussion considered other liver diseases which could likewise affect various Doppler indices, so it’s a good read and worth considering adding this to your liver assessment protocol.

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