Scanning the journals

Carotid wall elastography to assess midterm vascular dysfunction secondary to intrauterine growth restriction: feasibility and comparison with standardized intima–media thickness
Roch ML, Vaujois L, Dahdah N, Chibab N, Maurice A, Nuyt AM, Lévy E, and Bigras JL.
Journal of Ultrasound in Medicine and Biology 2014; 40 (5): 864–69
Intima-media thickness is an ultrasound based biomarker for measuring atherosclerosis in adults and children. This Montreal group of researchers have applied and validated a vascular elastography method adopted to process B-mode images which they term ImBioMark (imaging-based biomarker).

In this study they compared 7 adolescents born after IUGR with 7 normal control. They found that there was a clear difference in common carotid artery stiffness between patients with IUGR and controls. If their findings are corroborated it opens up the possibility of identifying vascular problems early in life with hopes of preventative interventions.

Feasibility of detection of the 3-vessel and trachea view using 3-dimensional sonographic volumes
Weissmann-Brenner A, Zajicek M, Weisz B, Pretorius DH, Achiron R, Gindes L.
Journal of Ultrasound in Medicine 2014; 33 (4): 681–85
We know how difficult it can be to get the 4-chamber fetal heart view and the outflow tracts so any technique that might help improve the examination is worth looking at.

In this small study of 31 fetuses between 19 and 25 weeks gestation a 60 second volume acquisition and manipulation using 3-D colour Doppler resulted in very impressive detection rates of the situs, stomach, 4-chamber view and transverse view of the heart outflow tracts. The technique described is simple and does not need extensive post processing manipulations. The 3-vessel and trachea views were obtained in over 90% of cases – more than double the expected rate using 2D sonography according to the current literature.

Impact of gestational age on nuchal fold thickness in the second trimester
Singh C, Biswas A
Journal of Ultrasound in Medicine 2014; 33 (4): 687–90
Increased nuchal fold thickness of 6 mm or more in gestations from 16–20 weeks is generally accepted as indicative of an increased risk for Trisomy 21. The positive likelihood ratio for a thick nuchal fold is 19.18 so this is a strong trisomy marker.

This large retrospective study of 32,207 women from Singapore, looked at the normal nuchal fold thickness from 16 to 24 weeks gestation. It establishes nomograms for each gestational age and reveals that although the mean nuchal fold thickness increases with gestational age, the 95th percentile remains below 6 mm even after 20 weeks.

This is important information as not all anatomy scans are done before 20 weeks gestation.

A cut off of 6 mm up to 24 weeks gestation would seem to be appropriate.

Cesarean scar endometrioma: case series
Cöl C, Yılmaz EE.
World Journal of Clinical Cases 2014 16; 2 (5): 133–36
Endometriomas in the cesarean section scar are rare (0.1 per cent of women who have had cesarean operations) and often present to the surgeon as an abdominal mass. This may need differentiation from an incisional hernia or other benign haematomas, granulomas or even malignant masses. The cyclical nature of the symptoms may help diagnosis but unfortunately ultrasound is underused and may be an aid to preoperative assessment. In this small series of 6 cases from Turkey the ultrasound diagnosis was made in 4 but the mass was misdiagnosed as incisional hernia in two others.

Does ultrasonography accurately diagnose acute cholecystitis? improving diagnostic accuracy based on a review at a regional hospital
Hwang H, Marsh I, Doyle J.
Canadian Journal of Surgery 2014; 57(3): 162–168
This is a nice retrospective study from a regional hospital in British Columbia in Canada, designed to review their accuracy of diagnosis of acute cholecystitis

107 patients needed an emergency cholecystectomy of which 83 had preoperative ultrasonography.
For gallstones ultrasound had 100% sensitivity, 18% specificity, 81% positive predictive value (PPV) and 100% negative predictive value (NPV).
For acute cholecystitis sensitivity was 54%, specificity 81%, PPV 85% and NPV 47%.
When combined with clinical findings of a positive Murphy sign and elevated neutrophil count however an ultrasound showing cholelithiasis or acute cholecystitis improved results yielding a sensitivity of 74%, a specificity of 62%, PPV of 80% and NPV of 53% for the diagnosis of acute cholecystitis. So while ultrasound alone has a high false negative rate for acute cholecystitis, use of the Murphy sign, raised neutrophil count in addition, can increase the diagnostic rate.

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