

## Commentary

The four articles chosen for this issues literature highlights reflect the varied spectrum of radiology as it is practiced today. The first two represent a new way of looking at old applications. The next two are essentially reviews of important aspects of our practice.

The availability of Multi Detector row Computerised Tomography (MDCT) scanners is increasing even in a country like ours which is significantly under resourced when it comes to health care. This allows us to look at old techniques in innovative ways. The paper Carrascosa et al looks at MDCT "virtual" hysterosalpingography. Although there is nothing virtual about the procedure as it requires cannulation of the cervix and injection of contrast, there are two significant advantages. One is that the visualisation of the uterine cavity and the surrounding structures is significantly better and secondly as per the authors claims these is a significant reduction in the radiation dose. The disadvantages are that the injection is carried out blindly and therefore over distension and intravasations are significant potential issues. In addition this is a single point examination and dynamic information regarding spill etc may not be available.

The second selection highlights that standards change with modalities and may therefore not be transferable from for example plain films to CT scans. The comparison of measurements of anatomical structures using standardise reference points when compared between plain films and MR versus MDCT showed small but significant differences. This highlights the need ensure that data is generalisable before applying it to situations other than those in which it was obtained.

Renal vein thrombosis in neonates is more common than generally thought of. Elsiaty in his review reiterates the basic sonographic features of the diagnosis. Although useful reminder for all of us it is especially recommended for trainees in radiology.

The last of the choices moves us into the arena of highly specialised radiology. Generally the principles behind image formation in magnetic resonance are poorly understood not just by trainees but also by experienced practitioners. Even in the magnetic resonance community the area of magnetic resonance spectroscopy is poorly understood. Soares and Law try to simplify things. This is a basic introduction to the fundamental concepts of magnetic resonance spectroscopy is easy to follow even for the uninitiated.

### Zafar Sajjad

Associate Professor Radiology  
Aga Khan University Hospital, Karachi.

## Abdom Imaging (2009) 34:121–33

Patricia Carrascosa,<sup>1</sup> Carlos Capuñay,<sup>1</sup> Mariano Baronio,<sup>2</sup> Elba Martín López,<sup>1</sup> Javier Vallejos,<sup>1</sup> Mario Borghi,<sup>2</sup> Carlos Sueldo<sup>2</sup> and Sergio Papier<sup>2</sup>

<sup>1</sup> Department of Computed Tomography, Diagnóstico Maipú, Av. Maipú 1668, Vicente López (B1602ABQ), Buenos Aires, Argentina

<sup>2</sup> CEGYR, Ciudad Autónoma de Buenos Aires, Buenos Aires, Argentina

## 64-Row multidetector CT virtual hysterosalpingography

**OBJECTIVE:** To illustrate the large variety of pathologies found on 64-row computed tomographic (CT) virtual hysterosalpingography (CT-VHSG) in the evaluation of the female reproductive tract in infertile patients.

**MATERIAL AND METHODS:** We prospectively evaluated CT datasets from 209 patients with diagnosis of infertility. CT-VHSG was performed with a 64-row

CT scanner using 64x0.625mm<sup>2</sup> collimation and 0.9mm slice thickness. A total volume of 20mL of an iodine contrast dilution was injected into the uterine cavity. The duration of the CT scan and the grade of patient discomfort of the procedure were documented. Images were analyzed on a workstation. The CT-VHSG exams were divided in studies with normal or pathological findings; pathologies were classified

according to their locations (cervical, uterine, and fallopian tube pathology).

**RESULTS:** No complications occurred during the procedure. The mean scan time was  $3.4 \pm 0.4$ s; the mean patient effective dose was  $2.58 \pm 0.75$ mSv. In relation to the patient's discomfort evaluation, 55.5% of the patients referred no discomfort during the procedure. Cervical pathology was found in 100/209 patients, uterine pathology in 93/209 patients, and fallopian tubes pathology in 37/209 patients.

**CONCLUSION:** A 64-row CT-VHSG provides a reliable, non-invasive alternative diagnostic technique in the infertility workup algorithm.

**Key words:** Multidetector computed tomography-Hysterosalpingography-Virtual studies-Virtual hysterosalpingography-Uterus-Fallopian tubes

## Clinical Radiology, Volume 64, Issue 1, January 2009, Pages 64-9

C.G. Cronin, D.G. Lohan, J.N. Mhuirheartigh, C.P. Meehan, J. Murphy and C. Roche

Department of Radiology, University College Hospital, Galway, Ireland

### CT evaluation of Chamberlain's, McGregor's, and McRae's skull-base lines

**AIM:** To evaluate the mean distance from the odontoid process of C2 to the standard skull-base lines (Chamberlain's, McGregor's, and McRae's lines) on computed tomography (CT) imaging. To compare these measurements to previously documented plain radiograph and magnetic resonance imaging (MRI) measurements.

**MATERIALS AND METHODS:** Reformatted midline sagittal CT images of 150 adults were retrospectively evaluated. The shortest perpendicular distance was measured from the Chamberlain's, McGregor's and McRae's baselines for each subject to the odontoid tip. Statistical analysis was performed to compare the CT data with the previously obtained MRI and plain film data.

**RESULTS:** The mean position of the odontoid process was 1.4mm below Chamberlain's line (median 1.2mm, SD 2.4mm), 0.8mm (median 0.9mm, SD 3mm) below McGregor's line and 5mm (median 5mm, SD 1.8mm) below McRae's line. There is no significant difference between male and female results ( $p > 0.05$ ) or between these CT and previous MRI measurements ( $p > 0.05$ ).

**CONCLUSION:** These results provide the mean and range of normal distance from the odontoid process to the most frequently used skull-base lines on the current population on CT.

## Abdom Imaging (2009) 34:413–8

Wael Magdy Elsaify<sup>1,2</sup>

<sup>1</sup> Department of General Surgery, University Hospital of North Tees, Stockton-on-Tees, UK

<sup>2</sup> 35 Meadow Vale, Northumberland Park, Newcastle upon Tyne, NE27 0BD, UK

### Neonatal renal vein thrombosis: grey-scale and Doppler ultrasonic features

**ABSTRACT:** Renal vein thrombosis RVT is the most common non-catheter related venous thromboembolic events VTE in newborns and is responsible for approximately 10% of all VTE in newborns. Almost 80% of all RVT present within the first month and

usually within the first week of life. Currently ultrasound is the radiographic test of choice because of its practicality, sensitivity and lack of adverse effects. The sonographic features vary according to the severity, the extent of the thrombus, the development of collateral

circulation and the stage of renal vein thrombosis. Initial diagnostic features include, renal enlargement, echogenic medullary streaks that have a vascular or perivascular distribution, thrombus in the vein prominent echopoor medullary pyramids, subsequently loss of corticomedullary differentiation, reduced echogenicity around the affected pyramids and echogenic band at the extreme apex of the pyramid. Higher resistance index and absent, steady, or less pulsatile venous flow on the affected side compared with flow in the

contralateral kidney are helpful Doppler signs. While sonography may be useful in revealing the venous and renal morphology, it is insufficiently reliable for assessment of the functional impact of these morphologic findings. There are no characteristic grey-scale or Doppler ultrasound prognostic features to predict outcome of neonatal RVT and long-term follow up of those children is required.

**Keywords:** Neonatal renal vein thrombosis-IVC thrombosis-Grey-scale ultrasound-Doppler ultrasound

## Clinical Radiology, Volume 64, Issue 1, January 2009, Pages 12-21

D.P. Soares,<sup>1</sup> M. Law<sup>2</sup>

<sup>1</sup> Section of Radiology, Department of Surgery, Radiology, Anaesthetics, and Intensive Care, University Hospital of the West Indies, Mona, Kingston, Jamaica

<sup>2</sup> Department of Radiology and Neurosurgery, Mount Sinai Medical Centre, New York, New York

## Magnetic resonance spectroscopy of the brain: review of metabolites and clinical applications

Magnetic resonance imaging (MRI) provides anatomic images and morphometric characterization of disease, whereas magnetic resonance spectroscopy (MRS) provides metabolite/biochemical information about tissues non-invasively in vivo. MRS has been used clinically for more than two decades. The major applications of this advanced MRI tool are in the investigation of neurological and neurosurgical disorders. MRS has also been used in the evaluation of the prostate gland and muscle tissue, but these

applications will not be addressed in this review. The aim of this review is to attempt to introduce the technique, review the metabolites and literature, as well as briefly describe our clinical experience.