Radiology

Significance of colonic mural thickening as a solitary finding in computed tomography: a study correlated with colonoscopic Results
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Significance of colonic mural thickening as a solitary finding in computed tomography: a study correlated with colonoscopic Results
Objectives To assess the significance of mural colonic thickening in computed tomography (CT) as a solitary finding in correlation with colonoscopic findings.

Methods: 188 patients, who had mural colonic thickening as a solitary pelvi abdominal CT finding between May 2016 and May 2017, and performed colonoscopy were studied retrospectively to assess the correlation between at CT and colonoscopic findings.

Results: After exclusion (due to inadequate preparation or previous colonic resection) a total of 188 patients (102 men, 86 women; mean [± SD] age 63 ± 7 years). Of these 188 patients, 96 were referred for colonoscopy because of suspicion of a neoplastic lesion and because they were determined to have more than one of the following colorectal abnormalities on CT: colonic wall thickening more than 3 mm (circumferential or partial), intraluminal soft tissue filling defect, peri-colonic fat attenuation or enlarged peri-colonic lymph nodes. Of the 96 patients with suspected colorectal tumor on abdomino-pelvic CT, 68 (70%) were determined to have neoplastic lesion on colonoscopy of these, 52 were malignant and 16 were benign. In the remaining 28 patients, colonoscopy revealed no abnormalities.

In 92 patients with colonic wall thickening as a solitary CT finding, colonoscopy revealed no abnormality in 60 patients (65%) and some pathology in 32 (35%). Of these 32 patients, 24 had diverticular disease and 8 had benign neoplastic lesions. Of the 24 cases in which diverticular disease was found at colonoscopy, only 16 correlated with the area of colon showing colonic wall thickening by CT, while the others were simply incidental colonic calcification. In four of the eight cases in which a benign neoplastic lesion was found at colonoscopy, the area of the finding (rectosigmoid) correlated in both examinations. The most common site where bowel wall thickening was reported at the rectum (30%) followed by the cecum (26%).

Conclusion: According to our Results, a solitary incidental finding of a thickened colonic wall on CT has a poor correlation with colonoscopic findings. Suspected colorectal abnormalities on CT warrant colonoscopy which revealed important correlation between multiple colorectal abnormalities and subsequent endoscopic findings of neoplastic pathology.

Role of MRI in early management of acute inflammatory pediatric brain diseases
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Background: Inflammatory brain diseases (IBrainDs) are a leading cause of life threatening neurological deficits in previously healthy children. We aimed to establish the role of MRI in early diagnosis of these critical entities to provide optimum management.

Methods: Prospective study of consecutive 30 patients in the pediatric age group (under the age of 18 years old) who clinically suspected to have inflammatory brain disease (IBrainDs) in the duration between March 2016 and December 2017. The primary outcomes for the study were neurologic outcome. Neurological deficits were measured with pediatric neurology team. Then the patients underwent brain MRI and laboratory investigations at Ain shams university hospitals where they followed up. After induction of therapy, the response to treatment was monitored while the children were hospitalized and some cases underwent follow up MRI when clinically indicated. The clinical provisional diagnosis was compared to the available laps and MRI findings to confirm the final diagnosis.

Results: In our study different types of IBrainDs were diagnosed. Post viral encephalitis represent the commonest type as it seen in 16 (53.3%) of our cases followed by demyelinating diseases including: three (10%) ADEM, three (10%) ANE, one case (3.3%) with MS and one case diagnosed with neuromyelitis optica (3.3%). Bacterial infection were seen in 2 (6.6%) patients with brain abscess and 1 (3.3%) patient with subdural empyma. One case (3.3%) diagnosed with vasculitis and also one case with Russmussen encephalitis was identified. The MRI findings show significant direct relationship with the clinical presentation.

Conclusion: Brain MRI Results have very important clinical value when diagnosing IBrainDs. The timing of any administration of medical treatment should rely more on MRI than on other investigations because MRI have more sensitivity especially with DWI, and some tests on the other hand are relatively unreliable. Early diagnosis and prompt management are extremely crucial in order to obtain a better outcome.

DWI in rectal cancer as a prognostic tool for treatment response
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Aim: To test the effectiveness of DWI as a non-invasive tool as a prognostic method to treatment response in rectal cancer.

Methods: Thirty patients with pathologically proven rectal cancer performed MRI with DWI before and after concurrent chemo radiotherapy (CCRT). ADC values were calculated for every patient in the two studies. Then, correlation with conventional
T2WI was done to assess treatment response, either partial response, non-responder or progressive disease according to modified RECIST criteria.

**Results:** The well differentiated adenocarcinoma showed restricted diffusion due to its high cellular packing and low ADC value with cut-off about $0.85 \times 10^{-3}$ mm$^2$/sec. These showed good response to CCRT. While poorly differentiated adenocarcinoma showed higher ADC with cut-off value of about $1.4 \times 10^{-3}$ mm$^2$/sec and showed poor response to treatment. DWI showed sensitivity of about 80% and specificity of 77% as a prognostic method for treatment response.

**Spectrum of malformations of cortical development with clinicoradiological correlation and analysis of associated abnormalities: experience from a tertiary care Centre in Egypt**

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**Purpose:** Malformations of cortical development (MCD) usually cause developmental disability, focal neurological deficits and seizures in children which are frequently resistant to anticonvulsant treatment. The structural neuroimaging technique especially MRI is the most important non-invasive method in their diagnosis and other associated brain abnormalities, thus smaller lesions can be identified. So, it is important to exclude MCD in every case of developmental delay, congenital neurological signs and intractable epilepsy.

**Methods and Materials:** All paediatric cases with MCD diagnosed on MRI at Ain Shams University Hospital during the period from January 2015 till January 2017 were retrospectively reviewed with correlation to their presenting symptoms.

**Results:** Among 4300 paediatric patients referred for MRI brain, 72 cases with MCD were identified with prevalence of 1.67%. Epilepsy was the main presenting symptom (72%) and focal epilepsy was seen in 19.5% of the cases. There was an association between focal cortical dysplasia and focal epilepsy ($P = 0.005$), polymicrogyria and global developmental delay ($P = 0.008$) and also between tuberous sclerosis and epilepsy ($P = 0.007$). The most common type of MCD was polymicrogyria (25%), followed by tuberous sclerosis (21%). MCD was seen in association with other neuroimaging findings, or as a part of syndromes as congenital muscular dystrophy spectrum especially Walker-Warburg syndrome and also it was seen in Sturge Weber and chronic infantile neurological cutaneous articular (CINCA) syndromes.

**Conclusion:** MCD showed relatively high prevalence among Egyptian children being associated with epilepsy and developmental delay. MCD was infrequently isolated, also occurred in association, or as a part of syndromes.

**The role of multidetector CT virtual cystoscopy compared to conventional cystoscopy in the diagnosis of urinary bladder neoplasms**

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**Purpose:** To assess the utility of multidetector CT virtual cystoscopy versus conventional cystoscopy in the diagnosis of urinary bladder tumors.

**Patients and Methods:** 30 patients were included, 23 patients with recently diagnosed bladder masses, 7 patients with history of previously resected bladder masses. Conventional cystoscopy was performed to all patients and the suspicious lesions were biopsied. CT examinations were performed with a 16-MDCT scanner and a 320-MDCT scanner. Multiplanar reconstructed (MPR) images were obtained. Virtual cystoscopic images were obtained with the volume rendering technique and the same software as for MPR images.

**Results:** CTVC detected 9 out of 10 polypoid masses detected by conventional cystoscopy (90% sensitivity), 23 out of 23 sessile masses (100% sensitivity), 4 out of 4 areas of wall thickening (100% sensitivity), 0 out of 1 case mucosal color change (0% sensitivity).

**Conclusion:** CTVC is a minimally invasive method that can be of value for screening, primary diagnosis and surveillance of bladder lesions.