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ABSTRACTS OF PAPERS FOR FULL MEMBERSHIP

RESUMES DES TRAVAUX DE TITULARIAT

SAMENVATTING VAN DE TITULARIAATSWERKEN

HEAD AND NECK

Brain MR imaging in leukemia

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Purpose: To document the brain imaging findings in leukemia. These include manifestations of primary disease, complications of therapy, and infection due to immune suppression.

Materials and methods: We reviewed the literature on the subject and retrospectively evaluated 12 patients with leukemia who were referred for CT or MRI of the brain. The series included 7 patients with acute myeloid leukemia (AML) and 5 patients with acute lymphoid leukemia (AML).

Results: Manifestations of primary disease in leukemia include granulocytic sarcoma, meningeal leukemia and cerebrovascular accidents. Granulocytic sarcoma, formerly known as chloroma, only affects patients with myeloid leukemia, and is seen in children more frequently than in adults. Leukemic meningitis can be seen in ALL with CNS invasion and occurs as leptomeningeal enhancement on MRI.

Side effects of therapy accounted for the majority of lesions in our series. Posterior reversible encephalopathy syndrome (PRES) related to chemotherapy and white matter disease attributable to chemotherapy were the most frequent observations. A stroke-like syndrome related to intrathecal administration of methotrexate and hemorrhagic infarct secondary to venous sinus thrombosis were also encountered in one patient.

Infectious complications are a significant cause of mortality in this patient population and were seen in 2 patients.

Conclusion: Familiarity with the diverse pathologies that may affect the brain in leukemia is essential for proper diagnosis of neurologic symptoms in these patients.

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NEURORADIOLOGY

Intrathecal Gadolinium to detect a CSF leak: results

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Aim: Cerebrospinal fluid leaks can be very difficult to diagnose or locate, both clinically and by standard diagnostic imaging procedures. Therefore, an informed-consent, ethical committee approved prospective observational cohort study was undertaken, to investigate the diagnostic success ratio and therapeutic consequences of magnetic resonance imaging with Gadolinium contrast administered by lumbar puncture to detect possible CSF-leaks.

Methods: Patients with a suspected CSF-leak were selected and divided into three groups based on their predominant symptoms: confirmed liquorrhoea, recurrent bacterial meningitis or spontaneous intracranial hypotension. T1 weighted MRI with fat suppression of the spine at 1 hour and of the brain at 6 and 24 hours post lumbar puncture and injection of 0.5cc gadolinium (Magnevist®) were performed.

Results: 35 patients were scanned between February 2005 and October 2009. The suspected leak was found in 6 out of 7 patients with liquorrhoea, 3 out of 5 patients with recurrent meningitis and 14 patients with complaints of spontaneous intracranial hypotension. Of the detected leaks, until now 18 were successfully closed, either neurosurgically or by an endoscopic ENT-procedure. There were no complications directly linked to the intrathecal injection of Gadolinium. One patient however, developed bacterial meningitis, as a complication of the lumbar puncture, but was successfully treated.

Conclusions: MRI with intrathecal Gadolinium injection is a safe and easy to perform technique for the detection of cerebrospinal fluid leaks, with a better spatial and temporal resolution than current standard diagnostic imaging procedures.

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CHEST

Right ventricle assessment with MDCT

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Purpose: To highlight the impact of vascular and parenchymal pulmonary affections on the right ventricle, and the measures to assess it.

Methodology: We performed a review of the litterature about the analysis of right ventricle with MDCT. The clinical relevance of the points that can be assessed thanks to MDCT were reviewed and illustrated with selected pertinent cases.

Summary: Many vascular and parenchymal pulmonary diseases have an important impact on the right ventricle, and the ability of the right ventricle to cope with these diseases is one of their key prognostic factor. MDCT, if realized without cardiac synchronization, can provide information about static measures (structure), mainly right ventricular volume, right ventricular hypertrophy and septal bowing. If realized with cardiac synchronization, MDCT provides information about the structure, but also the function of the right ventricle, namely ejection fraction and/or tricuspid annular plane excursion (TAPSE). Both techniques can provide information about preload, thanks to the analysis of vena cava, azygos and hepatic veins, as well as information about the afterlod with the analysis of main pulmonary artery diameter, and clot load scores.

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