

ABSTRACTS OF PAPERS PRESENTED AT THE ANNUAL SESSION OF THE RESEARCH GROUP ON ABDOMINAL AND DIGESTIVE IMAGING ORGANIZED IN LIEGE ON FEBRUARY 18, 2011 BY SECTION ABDOMINAL IMAGING

Scirrhus variant of hepatocellular carcinoma: a case-report

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We report a case of a rare variant of hepatocellular carcinoma (HCC) developed in a non-cirrhotic liver in a 64 year-old patient.

A 64-year-old patient was admitted because of abdominal pain associated to a liver mass. CT-scan showed large hypovascular nodules in the right liver lobe. Alpha-fetoprotein levels were very high (58000 ng/ml). There was no sign suggesting chronic liver disease. No primary carcinoma was found (in particular no gastric or ovarian carcinoma). After transarterial chemoembolization and portal embolization, a right hepatectomy was performed. Histopathological analysis of the liver specimen showed a moderately differentiated HCC with fibrous stroma with no diagnostic criteria for fibrolamellar HCC (Scirrhus HCC). The tumour cells expressed Heppar-1, glypican-3, AFP and also cytokeratin 19. The nontumoral liver showed no fibrosis, no steatosis or iron deposition.

The diagnosis of primary liver carcinomas with fibrous stroma, the diagnostic criteria of fibrolamellar HCC and the significance of cytokeratin 19 expression in HCC will be discussed.

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Mesenteric lesions: anatomo-radiological correlations

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Two cases of mesenteric lesions are reported. The first one concerns a 60 old woman for whom a calcified mesenteric mass was detected on abdominal CT required for a non specific pelvic pain. Small bowel enema was performed before surgery. The mass was totally removed. Pathology concluded to a calcifying fibrous tumor of the mesentery. The second case concerns a 83 old man complaining of abdominal pain and weight loss. A ill-defined solid mesenteric mass was found together with ascites and enlarged lymph nodes. Surgical exploration was performed and macrobiopsies were taken. The final diagnosis was sclerosing mesenteritis. Imaging findings are presented with close correlation with macroscopic and microscopic illustrations of the lesions.

This presentation is the opportunity to review the imaging findings suggestive of mesenteric diseases and to correlate these findings with pathological data.

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Accumulation of large amounts of intraperitoneal soft tissue material, mimicking pseudomyxoma peritonei

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A 37-year-old man, with no relevant issues in his medical history, presented with low abdominal discomfort, weight loss and red blood loss per anum. The patient underwent both an ultrasound and a CT scan which showed an accumulation of large amounts of intraperitoneal soft tissue material with small amount of ascites. Subsequently, an exploratory laparotomy was performed with resection of this extensive peritoneal soft tissue mass, omentectomy, segmental enterectomy and appendectomy. Rather surprisingly, this lesion was histologically consistent with a high-risk gastrointestinal stromal tumor (GIST). The patient is further treated with systemic chemotherapy.

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An uncommon cause of proximal intestinal subobstruction : wilkie syndrome

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A 23-year-old Caucasian man with a history of a hernia operation presented at the emergency room because of long-standing complaints of weight loss, vomiting and abdominal pain worsening over time. At time of presentation he was complaining of diffuse abdominal pain and vomiting. On physical examination there was abdominal distention with percussion pain. Routine laboratory tests were normal. A Ct-scan was performed showing duodenal dilation and retraction of the ileum, suggestive for a subobstruction due to adhesions. A laparoscopy was performed but could not show any adhesions nor internal herniations. Because the complaints persisted a transit of the small bowel (Rx SMD) was performed showing a severely slowed down gastrointestinal transit with pendular movements at the proximal duodenum. Decompression of the duodenum was associated with a temporary higher motility. These findings are highly suggestive for a Wilkie syndrome also known as Superior mesenteric artery syndrome. It is most commonly caused by loss of the mesenteric fat pad resulting in a compression of the third portion of the

duodenum by the abdominal aorta and the overlying superior mesenteric artery. A conservative treatment with high caloric drinks, small meals and prokinetics was started in order to gain weight and reverse the precipitating factor. Over the following months the patient gained weight and the symptoms resolved.

In conclusion: a rare case of sub-obstruction due to compression of the duodenum by the superior mesenteric artery also called Wilkie syndrome.

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Imaging features of caroli disease and syndrome: a retrospective analysis in 8 patients

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Segmental, nonobstructive dilatation of intrahepatic bile ducts is referred to as Caroli disease (CD). When associated with congenital hepatic fibrosis, the term Caroli syndrome (CS) is used. These disease entities share a common pathogenetic mechanism called ductal plate malformation.

The clinical and radiological records of 8 patients admitted between 1992 and 2009 with pathologically proven CD or CS were reviewed. Available imaging studies were retrospectively scored for the presence of central dot signs*, the degree of intra- and extrahepatic bile duct dilatation, intrahepatic calculi and secondary signs of portal hypertension such as splenomegaly and oesophageal varices. (*The 'central dot sign' is defined in Caroli patients in the literature as a bundle or dot of strong contrast enhancement within a dilated intrahepatic bile duct.)

Two patients had the 'pure form' Caroli disease, whereas in the other six cases the diagnosis of Caroli syndrome was made. Age at diagnosis ranged from 3 to 74 years. Presenting signs and symptoms: (hepato)splenomegaly (n = 4), hematemesis and/or melena (n = 3), cholangitis (n = 3). There was no evidence for malignancy in any of these patients. 7 out of 8 patients showed central dot signs on various imaging modalities. In the remaining case, where no contrast-enhanced studies were available, hepatic lesions very closely resembling central dots ('dot-like' sign) were seen. Right hepatic lobe predominant disease was present in 6 cases. Intrahepatic bile calculi were found in three patients. Secondary signs of portal hypertension were observed in all but one patient.

The central dot(-like) sign can be considered a hallmark sign of Caroli disease

and Caroli syndrome. It was reliably detected by current imaging techniques in all patients.

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False positive diffusion weighted imaging findings in an oncological setting

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Diffusion Weighted Imaging DWI is a new powerful technique for detecting metastases showing higher sensitivity values than the classical MR sequences for subcentimetric liver metastases. Little is known about false positive findings.

We like to present the selective imaging findings correlated with pathology of two patients with an oncological history and false positive DWI findings.

The first patient had a history of a Ewing sarcoma treated with chemo-radiation and surgery who also had an associated hemochromatosis. The second patient had a cholangiocarcinoma which was preoperatively treated with radiotherapy. In the first patient, multiple hypervascular nodules without iron overload mimicking metastases were found in the liver. The false positive DWI was created by the iron overload in the surrounding 'normal' liver parenchyma. The hypothesis for these lesions are sideronecrotic nodules with nodular regenerative hyperplasia. The second patient showed acute radiation induced hepatitis in the radiation field with inside two DWI false positive hypovascular pseudolesions, probably due to vascular changes creating hypoperfusion with hypoxia and nutritional ischemia.

DWI is a very powerful technique for detecting liver metastases but treatment-induced microvascular changes may induce false positive findings.

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Atypical focal hepatic mass in a young woman

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We report the case of a young woman of 22 years who presented with vague abdominal complaints and a palpable epigastric mass. Her medical history revealed a deep venous thrombosis in the leg, treated with a vena cava filter and marcoumar. The initial CT scan in portovenous phase demonstrated a large mass in the left liver lobe with a central scar, thrombosis of the left portal vein and mediastinal adenopathy. Additional triple-phase CT study of the liver showed a large heterogeneous mass predominantly hyperdense and with a central hypodense stellate scar with inlying calcifications. The central scar did not show any significant enhancement. An explorative laparoscopy was performed and biopsies were taken. Histopathologic examination confirmed the diagnosis of fibrolamellar hepatocellular carcinoma (FLC). These distinct imaging features can help to distinguish FLC from other benign and malignant lesions such as FNH, giant hemangioma, conventional HCC and malignant degeneration of hepatocellular adenoma. Diagnosing FLC is important, because in contrast to the benign lesions, FLC preferentially is treated by surgical resection. Even an advanced disease of FLC with lymphadenopathy, invasion of adjacent organs or limited metastasis does not preclude curative resection. In this particular case, medical treatment was chosen because of the presence of the mediastinal adenopathy.

Diagnosing FLC is important because of the different prognosis and therapy. Therefore, it should be included in the differential diagnoses of a large hepatic mass with central scar and inlying calcifications in a young patient with no underlying liver disease.

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Retroperitoneal fat-containing tumours

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A 30-year-old and 51-year-old woman presented at the emergency department with respectively impression of a left flank mass and unrelenting abdominal pain. In both patients ultrasonography showed a large heterogeneous mass involving almost the entire left flank.

We want to give an overview of the diagnostic possibilities for such a tumours.

On abdominal computed tomography (CT), the masses appeared well-circumscribed and contained fat. There was a heterogeneous contrast captation. The first patient underwent resection of the mass. In the second patient a CT-guided biopsy was performed. Pathologic examination of both lesions revealed fat-containing tumours.

The first patient had an angiomyolipoma of the kidney and the second patient had a retroperitoneal dedifferentiated liposarcoma. Angiomyolipoma is a tumour composed of varying admixtures of blood vessels, smooth muscle cells and adipose tissue; any one or two of these elements may predominate. Liposarcoma is one of the most common soft tissue sarcomas of adult life. Together with an adrenal myelolipoma, they represent the three most common fat-containing masses in the retroperitoneal region. The latter is a benign tumour composed of mature fat and interspersed hematopoietic elements that resemble normal bone marrow.

Final diagnosis of these retroperitoneal fat-containing tumours is usually not possible based on imaging characteristics alone as these lesions have overlapping features. Demographic and clinical data, however, will allow refining the diagnostic options and will help to determine treatment.

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ABSTRACTS OF PAPERS FOR FULL MEMBERSHIP

CHEST

Lung cancer: how to measure the tumor and its influence on T staging in the new TNM classification

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Purpose: In the new TNM classification, lung tumor measurement becomes important for T-stage assessment. However, no guidelines are proposed how to measure tumor. Purpose of this study was to evaluate if tumor measurement on different window settings, with different imaging techniques, can influence T- and group-staging in the new TNM classification. We also compared T stage assessed with the old classification versus T stage according to the new TNM

classification, and again we evaluated the impact on final TNM stage.

Methods and materials: 49 consecutive lung cancer patients who underwent PET-CT were retrospectively evaluated. Tumor size on mediastinal and lung window settings was compared. A possible influence on T- and group-stage was evaluated. In a subgroup of 23 patients, the same evaluation was done on a dedicated chest-CT and compared with the results on PET-CT. Statistical analysis was done using Bland-Altman-plot-method, together with a paired t-test, and the McNemar test.

Results: Tumor measurements on lung window were larger than on mediastinal window, which was statistically significant ($p < 0.05$). This led to different T-stage in 6 patients (12.2%) and different group-stage in one patient (2%). When we compared T- and group-stages based

on the old classification with the new T- and group-stages, we found a different T-stage in 12 patients (24.5%) and a different group-stage in 15 patients (31%). There was no statistical difference for tumor measurement done on dedicated CT and on PET-CT. T-stage was different in 2 patients (8.7%).

Conclusions: Tumor measurement is statistically different between lung and mediastinal window on PET-CT and dedicated CT. However, this difference has no significant influence on T staging and on group staging in the new TNM classification. PET-CT can be used for T-staging in lung cancer. Stage migration in the new TNM classification is comparable with other studies.

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