

ORAL PRESENTATION

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# Hepatic lesions

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From International Cancer Imaging Society Meeting and 15th Annual Teaching Course (ICIS 2015) London, UK. 5-7 October 2015

The liver presents with a variety of lesions for evaluation and appropriate triage with imaging. Ultrasound, MDCT and particularly MRI play a significant role in this objective. In patients without a known malignancy the vast majority of non-cystic lesions are benign (hemangioma, FNH, adenoma, focal fat, etc.), while a few are malignant. However, common benign hepatic lesions may pose a dilemma, if their imaging features are atypical. Although patients with a known malignancy are more likely to have a diagnosis of metastasis for a liver lesion, some studies have shown that small (<1cm) hepatic lesions are more likely to be benign even in patients with a cancer diagnosis [1,2]. While metastases may be a common diagnosis in cancer, it is important to recognise varied patterns of liver metastases after chemotherapy or after surgery. Chemotherapy-related focal or nodular fat deposition can also lead to variety of pseudolesions and one needs to be aware of these appearances and distinguish them from fat-containing hepatic tumors [3]. Uncommon occurrence of hepatic peliosis and sinusoidal obstruction syndrome also needs to be kept in mind in patients with cancer [4].

In patients with chronic liver disease, ultrasound surveillance is the method of choice for the early detection of HCC in cirrhosis [5]. For characterization of focal lesions in cirrhosis, EASL-EORTC and AASLD recommend multi-phasic contrast-enhanced MDCT or MRI. Imaging features typical for HCC is arterial phase hypervascularity and wash-out to hypoattenuation/hypointensity in the venous and/or equilibrium phase, which allows non-invasive diagnosis of HCC [6]. Recently diffusion-weighted imaging (DWI) and liver-specific MR contrast agent have been introduced in the clinical routine for detection and lesion characterization. The combination of DWI and liver-specific contrast agents yields the best results in the

detection liver metastases [7]. For characterization of focal lesions in cirrhosis, administration of liver-specific MR contrast agents may help to make a confident diagnosis [8,9].

In this workshop the work-up of focal liver lesions will be discussed and the varied imaging features of common and less common focal lesions will be presented.

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Published: 2 October 2015

#### References

1. Schwartz LH, Gandras EJ, Colangelo SM, et al: Prevalence and importance of small hepatic lesions found at CT in patients with cancer. *Radiology* 1999, **210**:71-74.
2. Noone TC, Semelka RC, Cem Balci N, Graham ML: Common occurrence of benign liver lesions in patients with newly diagnosed breast cancer investigated by MRI for suspected liver metastases. *J Magn Reson Imaging* 1999, **10**:165-169.
3. Valls C, Iannaccone R, Alba E, et al: Fat in the liver: diagnosis and characterization. *Eur Radiol* 2006, **16**:2292-308.
4. Iannaccone R, Federle MP, Brancatelli G, et al: Peliosis hepatis: spectrum of imaging findings. *AJR Am J Roentgenol* 2006, **187**:W43-52.
5. Forner A, Llovet JM, Bruix J: Hepatocellular carcinoma. *Lancet* 2012, **379**:1245-1255.
6. European Association For The Study Of The Liver, European Organisation For Research And Treatment Of Cancer: EASL-EORTC clinical practice guidelines: management of hepatocellular carcinoma. *J Hepatol* 2012, **56**:908-943.
7. Löwenthal D, Zeile M, Lim WY, et al: Detection and characterisation of focal liver lesions in colorectal carcinoma patients: comparison of diffusion-weighted and Gd-EOB-DTPA enhanced MR imaging. *Eur Radiol* 2011, **21**:832-840.
8. Kwon HJ, Byun JH, Kim JY, et al: Differentiation of small ( $\leq 2$  cm) hepatocellular carcinomas from small benign nodules in cirrhotic liver on gadoxetic acid-enhanced and diffusion-weighted magnetic resonance images. *Abdom Imaging* 2015, **40**:64-75.
9. Lee MH, Kim SH, Park MJ, Park CK, Rhim H: Gadoteric acid-enhanced hepatobiliary phase MRI and high-b-value diffusion-weighted imaging to distinguish well-differentiated hepatocellular carcinomas from benign nodules in patients with chronic liver disease. *AJR Am J Roentgenol* 2011, **197**:W868-875.

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doi:10.1186/1470-7330-15-S1-O28

Cite this article as: Schima and Jhaveri: Hepatic lesions. *Cancer Imaging* 2015 **15**(Suppl 1):O28.