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Lipiodol CT for Difficult to Image Hepatocellular Carcinoma

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Objective Hepatocellular carcinoma (HCC) can be a difficult tumor to image despite advances in CT and MRI technology. We present our experience with the use of lipiodol CT for diagnostic imaging of hepatocellular carcinoma (HCC) in cirrhotic patients in whom HCC was suspected, with elevated alpha-fetoprotein (AFP) levels and questionable or no lesions identified by conventional imaging modalities.

Design A four patient case report, in which lipiodol CT was successfully used for the diagnosis and localization of HCC.

Setting University teaching hospital

Patients Four patients with mildly elevated AFP levels in whom primary or recurrent HCC was suspected however the tumors could not be identified or localized by contrast enhanced CT and MRI.

Interventions Injection of lipiodol into the hepatic artery followed by non-contrast abdominal CT at 7-21 days

Main Outcome Measures Identification of previously non-visualized lesions

Results Non-contrast CT following lipiodol infusion identified previously non-visualized new or recurrent HCC lesions in all four of patients. It was also noted that an AFP level greater than 55 nanograms/mL was highly suggestive for the demonstration of a HCC on lipiodol CT.

Conclusions Lipiodol CT is a useful tool for the evaluation of patients with mildly elevated AFP levels in the face of non-visualized unclear lesions on either triple phase CT or contrast enhanced MRI as well as in the post-procedure evaluation of RF ablation. Larger prospective trials to evaluate the relationship between the enhanced CT images with lipiodol and AFP levels are needed.

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