Diagnostic Images

Hepatomegaly with bull's eye calcifications

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The patient

A woman aged 35 years from the Philippines presented with epigastric discomfort associated with an epigastric mass. On examination the liver was markedly enlarged.

Comment

The ring-like structure of the liver lesions suggests intermittent activity with healing resulting in calcification and subsequent recrudescence most likely due to chronic infection.

Liver calcification also occurs in tumours. In metastases from colon containing mucinous material, the calcifications are usually punctate, granular or with irregular nodules. Spiculated or star shaped calcification can occur in hepatoma but is usually irregular within a single area unless a multifocal tumour has been treated successfully. Multiple round calcified nodules may then appear. In fibrolamellar hepatocellular carcinoma the centre of the tumour can calcify producing irregular nodules of calcification.

Ring or curvilinear calcification occurs in hydatid disease, hepatic artery aneurysms and in mucinous cystic neoplasia while multiple small nodular calcifications can be due to intrahepatic biliary calculi or old healed granulomas especially tuberculosis and in some geographical areas, histoplasmosis.

Liver biopsy in this patient yielded granulomas with central caseation and acid-fast bacilli indicating the presence of tuberculous disease.

Figure 1 *Chest radiograph* Fibronodular disease with calcification at both apices suggesting old healed tuberculosis but there are also larger soft tissue nodules present at the left upper lobe possibly granulomas but could be metastases.

Figure 2 (a), (b), (c) and (d) *Abdominal sonography*. Multiple echogenic large and small nodules (small arrows) in both lobes of liver (L) with a mass in the porta hepatis probably representing lymphadenopathy (b-arrow) as well as extensive retroperitoneal lymphadenopathy (d-arrow). The pancreas (p) was displaced anteriorly, and the inferior vena cava (ivc) compressed but not obstructed: pv-portal vein, spv-splenic vein, smv-superior mesenteric vein, D-diaphragm.

Figure 3 Non-enhanced computed tomography shows large calcified nodules in all liver segments and large calcified lymph nodes in the porta hepatis (large arrows) as well as calcified gastric lymph nodes (crossed arrow). The spleen (sp), left kidney (k), adrenals (small arrows), aorta (a) and inferior vena cava (i) are normal.

Figure 4 After contrast enhancement the liver calcifications show concentric rings with an outer layer of unenhanced tissue.

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Reference

Friedmann, A.C. *Radiology of the Liver, Biliary Tract, Pancreas and Spleen*. Williams and Wilkins, Baltimore, London, 1987, pp. 50, 123, 199–201, 214, 222, 246–248.