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Answer: Hepatic calcifications

Focal hepatic calcifications are a relatively uncommon finding in radiographic imaging, with lesions more likely to originate in other organs found in the right upper quadrant: extra-hepatic biliary tree, right kidney, adrenal gland, pleura and costal cartilages.¹ The most common cause of calcified hepatic lesions is granulomas caused by tuberculosis (TB) as was demonstrated in this case.^{1,2} Besides infections, other causes include calcification associated with hepatic neoplasms, vascular or biliary sources within the liver, and iatrogenic causes.^{1,3}

Characteristics (size, shape, pattern, density, location and distribution) may provide clues as to the primary cause. Calcified granulomas caused by TB and histoplasmosis tend to be small, dense, multiple and scattered throughout the liver. They may be associated with the presence of calcified granulomas in other organs such as the spleen or lungs, with their presence raising the suspicion for diagnosis especially in endemic areas.¹⁻³ Other infective causes include brucellosis, coccidioidomycosis, toxoplasmosis, cytomegalovirus and even more rarely, syphilitic gumma. Parasitic infections have also been implicated, most notably schistosomiasis causing capsular calcification, and echinococcosis (hydatid disease) causing ring calcifica-

tion.¹ Healed liver abscesses may also lead to calcification.¹

Non-infective causes include hepatic tumours, primary and metastatic. Benign causes include haemangioma followed by hepatocellular adenoma, and in children, infantile haemangioendothelioma. Primary malignant causes include hepatocellular carcinoma (HCC) (especially those that have been treated with chemotherapy or radiotherapy), fibrolamellar HCC and hepatoblastoma in a younger age group, intrahepatic cholangiocarcinoma and cystadenocarcinoma.^{1,3} Associations with metastatic neoplasms are rare and most commonly mucin-producing-tumours such as those originating from the colon or rectum. Other possible origins of metastasis include breast, ovary and thyroid.¹

Vascular calcified lesion such as a calcified thrombus in the inferior vena cava or hepatic artery atherosclerosis and aneurysm may also be a potential source of calcification, with the aneurysms usually presenting as an eccentric lesion surrounding the vessel.³ In addition to calcification in the liver parenchyma, the process may also occur in the hepatic capsule, for example in barium granulomatosis from iatrogenic extravasation of barium into the peritoneal cavity via a colonic perforation.³

REFERENCES

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- 3:** Eisenberg RL. *Gastrointestinal radiology. A Pattern Approach.* Barry B, Sutton P, editors. Abdominal Calcifications. 4th Ed. Lippincott Williams & Wilkins; 2003: pg 946-956.