

Case Report

An Enlarging Metastatic Calcified Liver Lesion of an Occult Melanoma

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Keywords

Liver lesion · Melanoma · Hemangioma

Abstract

Calcified liver lesions are caused by a wide variety of factors. The most common lesions are inflammatory liver lesions followed by benign and malignant neoplasms. Hemangioma, one of the most common benign hepatic neoplasm in adults, often contains calcifications, in up to 20% of cases secondary to fibrosis and thrombosis of blood vessels. These calcifications are typically large, coarse, and located in the center of the lesions. Liver metastases, the most common malignant lesions found in the noncirrhotic liver, may contain areas of calcification. Radiologists should be aware of morphologic imaging features of calcified liver lesions to help differentiate benign from malignant lesions. Liver biopsy should be offered when the diagnosis is doubtful.

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Case Report

A 55-year-old man with a past medical history of alcohol dependence, persistent atrial fibrillation, and severe biventricular systolic heart failure presented to the emergency department with complaints of weakness, cough, exertional dyspnea, and malaise. He denied any chest pain, palpitations, lightheadedness, fever, chills, sweats, nausea, vomiting, or diarrhea. He was found to have atrial fibrillation with a ventricular response rate of 173. On physical

examination, he was alert but anxious with an irregular heart rate. The rest of the physical examination was unremarkable. He developed subsequent diltiazem-induced hypotension and resultant global ischemic organ injury requiring cardioversion, intubation, and vasopressor support. Laboratory studies at the time of presentation were significant for sodium of 130 mmol/L, potassium of 4.6 mmol/L, creatinine of 2.4 mg/dL, albumin of 2.4 g/dL, AST of 10,050 U/L, ALT of 3.056 U/L, alkaline phosphatase of 119 U/L, and total bilirubin of 3.6 mg/dL. His complete blood count was significant for hemoglobin of 11.0 g/dL, MCV of 97.1 fl, platelet count of $148 \times 10^9/L$, and WBC of $18.3/\mu l$. He was also noted to be coagulopathic with an INR of 2.2. A CT scan of the thorax was performed to rule out pulmonary embolism, and this showed an incidental liver lesion measuring 2×2 cm with residual contrast in the noncontrast series and was read as a hemangioma (Fig. 1a). He presented to the emergency department 9 months later with syncopal episodes. CT angiography showed no signs of pulmonary embolism, but an enlarging liver lesion with intralesional calcifications measuring 4.3×3.9 cm with borderline enlarged lymph nodes in the porta hepatis (Fig. 1b). He was referred to our hepatobiliary neoplasia clinic for further management. An ultrasound-guided percutaneous biopsy of the lesion was obtained (Fig. 2).

The liver biopsy showed a neoplasm with epithelioid and spindle cell features, prominent nucleoli, occasional intranuclear pseudoinclusions, and frequent mitotic activity. Immunostains showed the tumor cells to be positive for S100, Melan-A, and SOX10, but negative for keratins (AE1/AE3, Oscar), desmin, CD34, and arginase, consistent with a diagnosis of metastatic melanoma. Esophagogastroduodenoscopy and colonoscopy were performed to exclude other primitive malignant cancers. Complete skin and eye examination in addition to further imaging studies did not identify the primary site. His lesion was treated with stereotactic body radiation therapy (SBRT), which he tolerated well.

Discussion

The lesion was initially interpreted as a hemangioma, which typically appears as a well-circumscribed lesion with characteristic progressive centripetal fill-in on contrast-enhanced CT or MRI. These characteristics are absent in patients with poor ejection fraction. Calcifications are rarely found in hepatic hemangiomas, but commonly associated with primary and metastatic hepatic neoplasms [1]. Metastatic melanoma is a hypervascular tumor that appears as a hypodense lesion on axial enhanced CT. It shows intense enhancement on MRI after gadolinium injection and washout in the delayed phase [2]. Fine needle aspiration biopsy is safe and effective when a hemangioma enlarges or has an atypical morphology on imaging [3]. When the diagnosis is doubtful, surveillance imaging and percutaneous liver biopsy is recommended for histopathologic examination.

In metastatic melanoma, the liver is the most common site of spread (in 89% of cases) and the sole site of metastatic disease (in 46% of patients) [4]. Once liver metastases develop, survival is very short due to disease progression in the liver [5]. SBRT is an effective treatment for controlling metastatic melanoma with limited morbidity [6]. The majority of patients will achieve a complete metabolic response at a median of 2.8 months [7]. SBRT should be considered as a low-morbidity option for patients with oligometastatic extracranial metastatic melanoma.

The prognosis of patients with metastatic melanoma with occult primary is relatively good, with a median survival of 4.9 years [8]. The incidence was reported to fall between 4 and 10% [9–11]. The primary lesion could regress or fall below the threshold of detection.

In all such cases, a thorough ocular and skin examination is advised. Referral to dermatology is mandatory to examine pigmented lesions undergoing past change and to reexamine tissues from previously resected pigmented lesion, even if they were thought to be benign.

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Statement of Ethics

The authors have no ethical conflicts to disclose.

Disclosure Statement

The authors declare no conflicts of interest.

Author Contributions

All authors reviewed medical records and data and participated in the writing of the paper.

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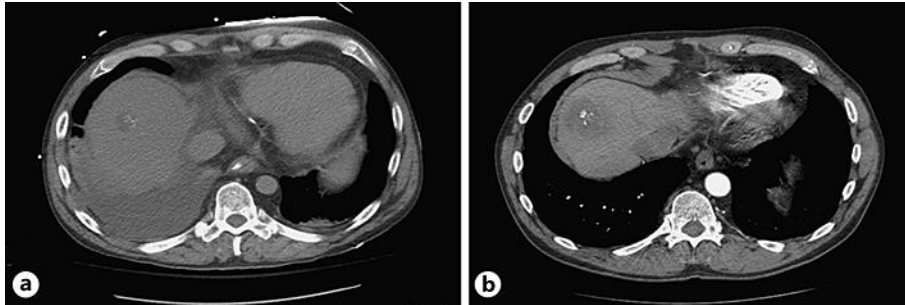


Fig. 1. **a** CT scan showing a suspicious hepatic lesion in the right hepatic lobe with residual contrast in the noncontrast phase and measuring 2 × 2 cm. **b** CT scan showing a suspicious hepatic lesion with internal calcifications involving the right lobe of the liver and measuring 4.3 × 3.9 cm.

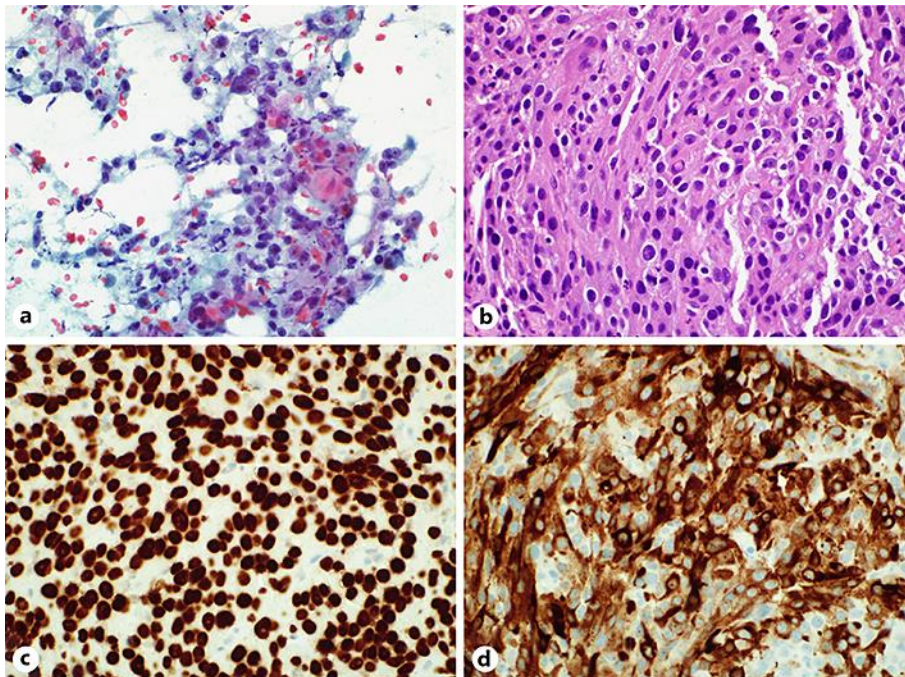


Fig. 2. Liver biopsy, 400× magnification. **a** Papanicolaou-stained touch preparation. **b** Formalin-fixed, paraffin-embedded section. H&E. **c** SOX10 immunostain. **d** Melan-A immunostain. The specimen demonstrated epithelioid and spindle cell features, prominent nucleoli, and intranuclear pseudoinclusions, typical for melanoma. A melanocytic immunophenotype helped exclude morphologic mimics such as carcinoma, gastrointestinal stromal tumor, or other sarcomas.