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Angiomyolipoma mimicking hepatocellular carcinoma on preoperative magnetic resonance image: The way to prevent unnecessary surgery for hepatic angiomyolipoma

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Introduction: The magnetic resonance imaging (MRI) of hepatic angiomyolipoma (AML) is often mistaken for hepatocellular carcinoma (HCC). In this study, clinicopathological, and imaging features of hepatic AML misdiagnosed with a malignant tumor before surgery were reviewed.

Methods: A total of 34 patients diagnosed with hepatic AML by surgery (n = 20) or biopsy (n = 14) were included (2008–2020). Twenty female and fourteen male patients with a mean age of 52.9 years (range 28–78) were followed-up for about 68.23 months.

Results: Only one patient was positive for HBsAg among 34 cases, and preoperative levels of serum alpha-fetoprotein and protein induced by vitamin K absence-II were not increased for all patients. Two patients showed non-alcoholic fatty liver disease. Twenty-nine patients have solitary liver tumor and the remainder has multiple ones. In two cases, renal AML was simultaneously diagnosed. In preoperative MRI, AML was misdiagnosed as HCC (n = 14, 41.2%), adenoma (n = 1, 2.9%), cholangiocellular carcinoma (n = 1, 2.9%), intrahepatic metastasis of malignant tumor (n = 2, 5.8%), or inconclusive opinions (n = 6, 17.6%). In subgroup analysis, overall survival was not different ($p = 0.496$), on the contrary, biopsy group showed significantly short length of hospitalization ($p = 0.001$), small tumor size (23.5 mm versus 45.8 mm, $p = 0.017$), better diagnostic accuracy (50% versus 15.0%, $p = 0.011$). In immunohistochemical analysis, several antibodies were detected including HMB45 (in 32 cases), SMA (n = 19), CD 34 (n = 7), Melanin A (n = 5).

Conclusions: Since AML is a benign tumor, for the suspicious HCC suddenly discovered in a patient without clinical risk factors, it is better to perform biopsy first to prevent unnecessary surgery.

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