

車輻状の血管構築を呈した転移性肝神経内分泌腫瘍の1例

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抄 録

50代女性。膵癌術後、直腸カルチノイドで内視鏡的粘膜下層剥離術後の経過観察のCTにて肝S6に低吸収域を指摘された。超音波検査では、肝S6に境界明瞭輪郭不整な低エコー結節でカラードプラでは中心部から辺縁に向かって車輻状に走行する血流信号を認めた。造影超音波検査（Contrast enhanced ultrasonography: CEUS）では、動脈優位相血管像にて背面から内部に流入する蛇行した線状の造影効果を認め、還流像にて結節全体にびまん性の造影効果を呈し、造影効果は周辺肝実質より明らかに強かった。門脈相にて造影効果は比較的遷延しており、早期のwashoutは見られなかった。積算画像では中心部から放射状に広がる車輻状の血管構築を認めた。肝部分切除を施行し、病理組織所見にてNET（G2）と診断された。NETの肝転移腫瘍の典型的なB mode所見は、均一なやや高エコー腫瘍で、CEUSでは動脈優位相での均一な強い増強効果、門脈優位相でwash outされ、後血管相で境界明瞭な造影欠損を示すことが多いと報告されている。しばしば肝細胞癌（Hepatocellular carcinoma: HCC）や限局性結節性過形成（Focal nodular hyperplasia: FNH）との鑑別が問題となる。HCCではwash outが遅いこと、FNHではカラードプラやCEUSにて車輻状の血管構築を示し、多くは後血管相で造影欠損を呈さないことが鑑別点とされる。しかしながらFNHの中には後血管相で造影欠損を呈する報告もあり、慎重な鑑別診断が必要とされる。今回我々は、CEUSで車輻状の血管構築を呈し、鑑別に苦慮したが、生検にてNETの肝転移であった症例を経験したので報告する。

A case of hepatic metastasis of neuroendocrine tumor presents a “spoke-wheel pattern” on contrast-enhanced ultrasonography

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Abstract

A woman in her 50s presented to our clinic with a low-density area detected in hepatic segment 6 on unenhanced computed tomography. A low-echoic nodule with a clear border was observed on ultrasonography. Contrast-enhanced ultrasonography (CEUS) showed a meandering linear contrast enhancement pattern flowing into the nodule on vascular imaging in the arterial phase and a strong homogeneous enhancement pattern on perfusion imaging. The contrast enhancement pattern was relatively prolonged in the portal phase, and washout was not observed. In accumulation imaging, a blood vessel structure with a spoke-wheel pattern was identified. In the post-vascular phase, a clear defect with an irregular border measuring 17 mm was noted. After partial hepatectomy, a neuroendocrine tumor (NET) (G2) was diagnosed. The typical B-mode findings of NET-associated liver metastatic tumors are known to be uniform and slightly echogenic masses. CEUS findings consist of a uniformly strong enhancement pattern in the arterial phase, washout pattern in the portal phase, and a clear defect in the post-vascular phase. Differential diagnosis between metastatic NET and hepatocellular carcinoma (HCC) or focal nodular hyperplasia (FNH) is essential. Features that can be used to differentiate these are that HCC shows a relatively late washout and FNH often shows a spoke-wheel pattern on color Doppler and accumulation imaging in CEUS. However, some cases of FNH show a defect enhancement pattern in the post-vascular phase. We report a case of hepatic metastasis of NET that showed a spoke-wheel enhancement pattern on CEUS.

Keywords

focal nodular hyperplasia, neuroendocrine tumor, ultrasonography, contrast-enhanced ultrasonography, liver metastasis

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