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Liver metastasis from adenoid cystic carcinoma: imaging and histologic features

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ABSTRACT

Adenoid cystic carcinoma is a rare tumour. The reported incidence of isolated metastases to the liver is rare but possible and it seems to be more likely in case of perineural invasion.

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A 62-years-old man with previous history of intermediate grade adenoid cystic carcinoma with perineural invasion (T2N0M0) underwent follow-up computed tomography (CT) study which showed a solitary hepatic lesion in segment VIII (Fig 1). The patient had no symptoms and no tumor markers abnormalities. Complementary magnetic resonance (MR), contrast-enhanced ultrasound and fluorodeoxyglucose-positron emission tomography -CT were performed and showed nonspecific diagnostic features (Figs 2-4). MR T2-weighted images were suggestive

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Fig. 1. Contrast-enhanced CT images acquired at the portal venous phase showed a solitary focal lesion in segment VIII of the liver. The lesion appeared well delimited and hypovascular.

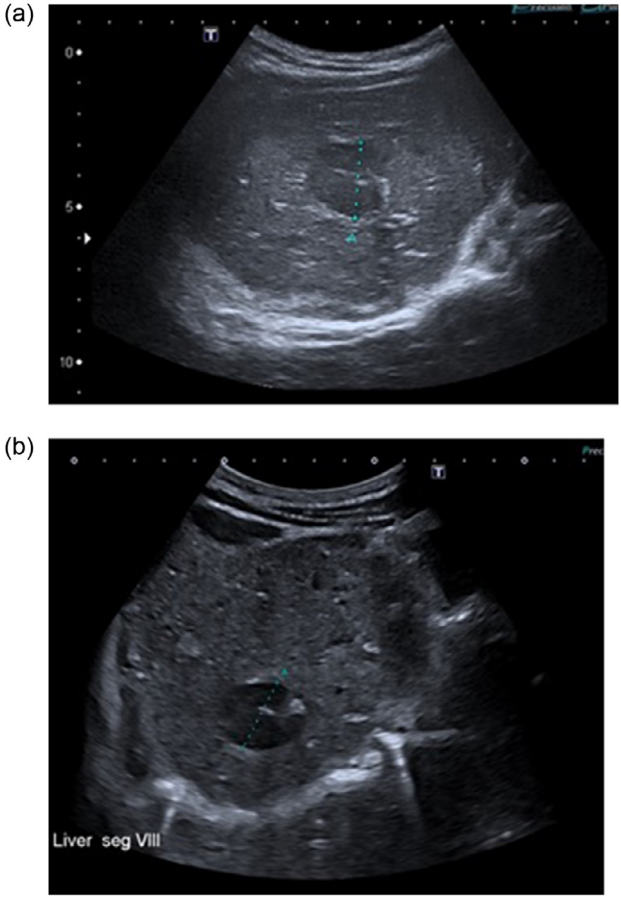

Fig. 2. On contrast-enhanced US study the lesion showed moderate enhancement more prominent in the central part of the lesion (A) followed by very rapid wash-out (B).

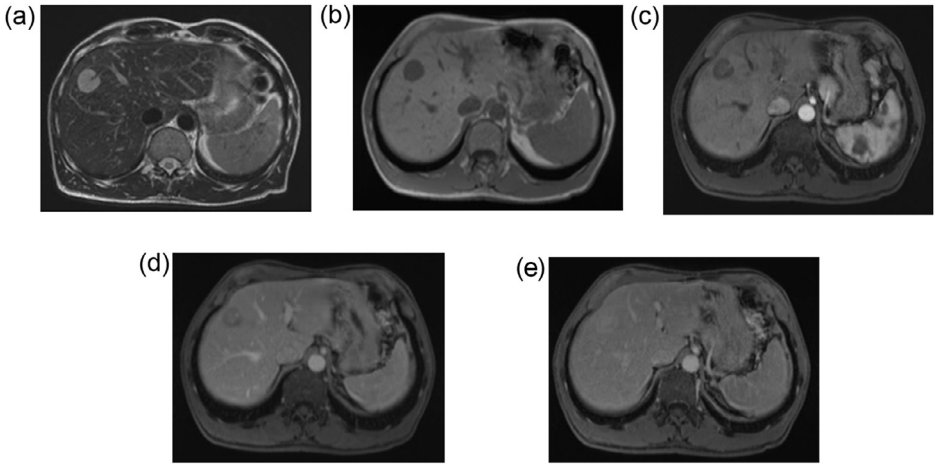

Fig. 3. MR images of the liver. Transverse T2-weighted TSE image (A) showed a well-delimited, high signal focal lesion in segment VIII. The black linear finding corresponded to a vascular structure. Transverse 3D T1-weighted fat saturation (B) acquired before and (C-E) after extracellular contrast agent administration showed progressive enhancement of the lesion: at the arterial phase (C) an enhancing central area was observed. At the 3-minutes delayed venous phase (E) the lesion appeared slightly more enhancing compared with the surrounding liver parenchyma.

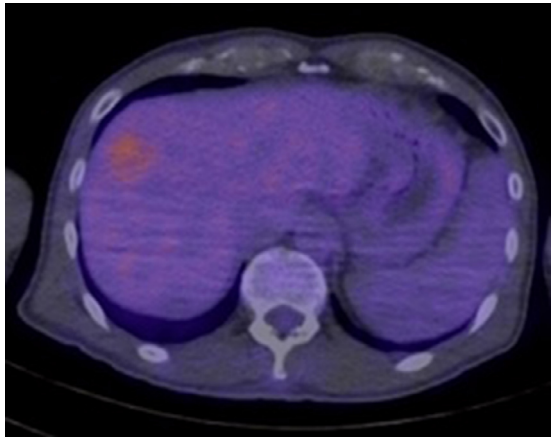

Fig. 4. On FDG-PET/CT the lesion demonstrated moderate grade of metabolic activity. No other site of suspicious disease was identified elsewhere. (Color version of figure is available online.)

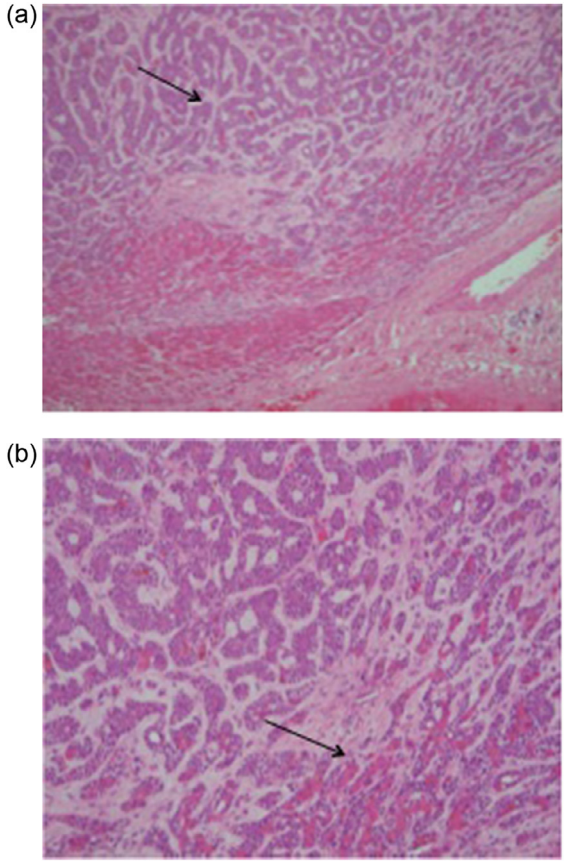

Fig. 5. H&E stain at 10x (A) and 20x (B) magnification.
The image at lower magnification (A) shows glandular structures with mucin in the lumen (arrow) characteristic of adenoid cystic carcinoma. At higher magnification (B) tumor infiltration of the normal liver is shown (arrow). On immunohistochemistry the tumor cells were positive for MNF 116 and CK7, the ductal cells were strongly positive for CD117 and showed patchy positivity for mCEA and S-100 and the myoepithelial cells were p63 positive. (Color version of figure is available online.)

of a hemangioma-like lesion, but this was not confirmed by the enhancement behavior. Furthermore, the absence of wash-out was not in favor of primary or secondary hepatic malignancy. Fluorodeoxyglucose-positron emission tomography and/or CT showed moderate grade of metabolic activity (SUV max 3.6) and this is atypical for hemangioma, which usually shows SUV between 0.7 and 1.67.[1] Primary or secondary malignancies such as hepatocellular carcinoma (SUV between 2.3 and 6.3)[2] and metastasis from adenoid cystic carcinoma (SUV between 1.5 and 6.2)[3] could not be ruled out. Surgical resection of the hepatic lesion was decided by multidisciplinary team, taking in consideration the oncological status of the patient. Histology and immunohistochemistry confirmed that the lesion was liver metastasis from adenoid cystic carcinoma (Fig 5). Adenoid cystic carcinoma is a rare tumor, accounting for 1% of all head and neck malignancies.[4] The reported incidence of distant metastases during follow-up, after complete resection of the primary tumor, is 17%.[5] Distant metastases of adenoid cystic carcinoma occur most often in the lungs as primary site.[6] However, isolated metastasis to the liver has been previously described.[7] The presence of perineural invasion has been related with a higher risk of metastasis. However, this remains controversial.[8-10]

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