Bone mass of the calvarium

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Published online: 30 November 2012
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Question

A 48-year-old man was admitted to the hospital because of abnormal kidney function detected on blood tests and a dull headache increasing in severity over the last 3 months.

Radiographs of the calvarium revealed a large lytic mass of the left frontal bone (Fig. 1).

The bony mass appearance on magnetic resonance imaging (MRI), computed tomography (CT) and ^{18}F -fluorodeoxyglucose (FDG) positron emission tomography combined with computed tomography (FDG-PET/CT) is illustrated in Figs. 2–4.

Fig. 1 X-rays of the skull: large osteolytic mass of the left frontal bone with some thickened trabeculae. No other bone lesions were detected by whole-body X-rays

The diagnosis can be found at doi: 10.1007/s00256-012-1547-6.

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Fig. 2 **a, b** The MRI examination shows a large mass of the left frontal bone (62×32 mm on the axial plane and 31 mm on the coronal plane) with some low-intensity linear images (*black arrowheads*=close-up). The same appearance is also visible on **c, d** T2-weighted fluid-attenuated inversion recovery (FLAIR) images (=close-up) and on **e, f** T1-weighted images after contrast medium administration (=close-up)

Fig. 3 The CT shows a large punched-out osteolytic mass with a poorly visible inner table and some residual thickened cortical trabeculae

Fig. 4 **a** ^{18}F -fluorodeoxyglucose (FDG) Positron Emission Tomography co-registered with MR T2-weighted images of the brain; **b**: transverse views of FDG PET/CT images centered on the D5 vertebral

body; **c**: transverse views of FDG PET/CT images centered on the L5 vertebral body and **d**: sagittal and coronal FDG PET/CT views of the spine