Interesting images

Incidental bone lesion on $^{99m}$Tc-exametazime brain perfusion SPECT

Lesión ósea incidental en SPECT cerebral de perfusión con $^{99m}$Tc-exametazima

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Brain perfusion SPECT with $^{99m}$Tc-exametazime ($^{99m}$Tc-HM-PAO) in a 82-year-old man with mild cognitive impairment revealed an area of extracerebral activity in the right frontal area (Fig. 1). This corresponds to radiotracer accumulation in a lytic lesion in the frontal bone. Since the patient did not accept surgical biopsy, histopathological examination could not be performed.

**Figure 1.** Brain perfusion emission tomography ($^{99m}$Tc-exametazime; 740 MBq, 60 min after injection): transaxial slice (A) and selected views from 3D surface rendering reconstruction (B) showed a hot lesion outside the brain limits. Computed tomography (CT) of the head revealed a lytic lesion in the frontal right bone, that exactly corresponds to the hot spot seen on scintigraphy: brain (C) and bone (D) window.
but a diagnosis of epidermoid cyst in the bone was established from CT features and follow-up.

Uptake of exametazime into extracerebral tumors has been described, but this appears to be the first case reported in epidermoid cysts. Epidermoid cysts are benign, congenital, ectodermal, uncommon lesions (1% of all intracranial tumors) and their localization is intradiploic in 25% of cases.\(^1,2\)

Many extracerebral tumors have been shown to take up exametaxime, including lung carcinoma, melanoma, multiple myeloma, renal cell carcinoma, thyroid and head and neck tumors.\(^3-5\) With ethylene cysteinate dimer (ECD), other brain perfusion agent, extracerebral tumors have also been visualized.\(^6\)

In most tumors, exametazime is taken up by virtue of its lipophilicity, but others mechanisms may play a role.

**References**