Interesting image

\textbf{99mTc-HDP SPECT/MRI in isolated xanthoma of the temporal bone}

\textbf{99mTc-HDP SPECT/RM en xantoma único del hueso temporal}

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A 41-year-old male patient with a long history of migraine, was referred to our department for nonspecific groin pain. Bone scintigraphy revealed an incidental hypermetabolic focus located at right temporal bone (Fig. 1a and b). A fused \textsuperscript{99m}Tc-HDP SPECT/MRI was performed in order to improve the nature. SPECT images showed a well-defined increased uptake of radiotracer with annular shape and an osteoblastic rim uptake surrounding the lesion (Fig. 1c), in correlation with an intradiploic epidermoid cyst of the temporal bone observed in axial FLAIR-sequence MRI (Fig. 1d and e). Foamy macrophages with related spaces of preexisting cholesterol crystals and extensive foci of hemorrhage were observed in hystopathology (Fig. 2).

![Image](https://example.com/figure1.png)

**Fig. 1.** (a) Whole body bone scintigraphy revealing an hypermetabolic focus in the right temporal region. (b, c) Planar lateral view and SPECT images of the skull revealed central photopenic area surrounded by rim of increased uptake. (d) Axial FLAIR-sequence MRI, images suggestive of an intradiploic epidermoid cyst of the temporal bone. (e) SPECT/MRI hybrid images.

Intraosseous xanthoma is an extremely rare benign bone tumor\textsuperscript{1} characterized as a lytic lesion, often with cortical expansion or disruption. To our knowledge, only 16 cases of temporal isolated xanthoma have been reported\textsuperscript{2} but none of nuclear medicine imaging have been published up to date. Although they are benign in nature, intracranial xanthomas frequently progress and may cause cranial nerve deficits. They generally originate from hyperlipidemic and hypercholesterolemic diseases. In our case, hyperlipidemia was absent. From a clinical neurological standpoint, xanthoma of bone is best regarded as a benign tumor of histiocytic origin stemming from bone marrow.

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Bone scintigraphy and SPECT images could be useful for mapping out the skeletal system. Because of its aggressive imaging appearance other primary bone tumors, metastatic involvement or xanthomatous diseases (Histiocytoma, Erdheim-Chester or Rosai-Dorfman diseases) need to be ruled out. Total removal of the tumor was curative. After surgery, patient is clinically asymptomatic after 15 months follow-up.

References

Fig. 2. Histological sections (hematoxiline and eosine staining, magnification 10× in top panel, 40× in bottom panel) showing pale-staining foamy cells with extensive foci of hemorrhage that leads to establish the diagnosis.