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LETTER TO THE EDITOR

Letter to the editor: giant cell reparative granuloma of the temporal bone

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A 27-year-old female patient with no significant medical history presented with persistent headache. Clinical examination and blood tests (including normal calcium levels) were unremarkable. CT examination revealed an osteolytic lesion of the squamous part of the left temporal bone eroding the two tables and extending inwards into the middle cranial fossa and outwards into the upper part of the temporo-mandibular joint. The lesion appeared overall hypodense with some inlying scattered calcifications and thin calcified marginal lining (Fig. 1a, b). MRI demonstrated a well-circumscribed extra-dural expansile mass from bony origin pushing the adjacent temporal lobe without parenchymal signal intensity changes. The mass appeared strongly hypointense on both pre-contrast T1- and T2-weighted images with some central patchy T2-hyperintensities and contrast-enhanced T1-weighted images showed an intense but heterogeneous enhancement (Fig. 2a–c). A biopsy was performed and revealed the presence of stroma cells intermixed with a large amount of multinucleated giant cells and hemosiderin deposits leading to the potential diagnosis of giant cell tumor versus aneurismal bone cyst (Fig. 3a, b). Multidisciplinary discussion together with the confirmation of absence of H3F3A mutation and USP6 rearrangement permitted to establish the final diagnosis of giant cell reparative granuloma. Surgical resection revealed a solid and yellowish lesion adhering to the dura mater (Fig. 4). Complete surgical removal was achieved in spite of the extension into the temporo-mandibular joint and the postoperative course was uncomplicated.

Giant cell reparative granulomas are benign lesions originating from bone tissue, most frequently found in the mandible and maxilla. The occurrence in the temporal bone is extremely rare [1]. However being hypothesized to be related to an intra-osseous bleeding, a history of trauma is present in a minority of cases [2]. In this location, the main differential diagnosis is a giant cell tumor, which can have very similar features at imaging modalities [3]. Final diagnosis therefore relies on histopathological examination [4]. To minimize the risk for recurrence as well as to assess the definite diagnosis in cases of inconclusive biopsy, complete surgical excision is the best suited treatment [5].

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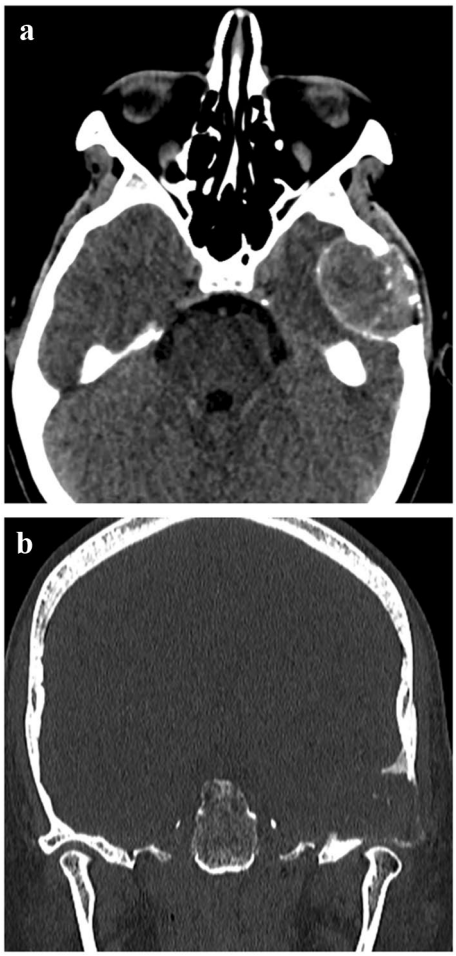

Fig. 1 CT scan. **a** Axial image with soft-tissue window: osteolytic expansive lesion of the left temporal bone expanding and eroding the inner and outer tables of the skull with inward intracranial extension. Overall isodense aspect with some scattered calcifications and thin mineralized margin. **b** Coronal image with bone window: osteolysis involving the upper part of the temporo-mandibular joint

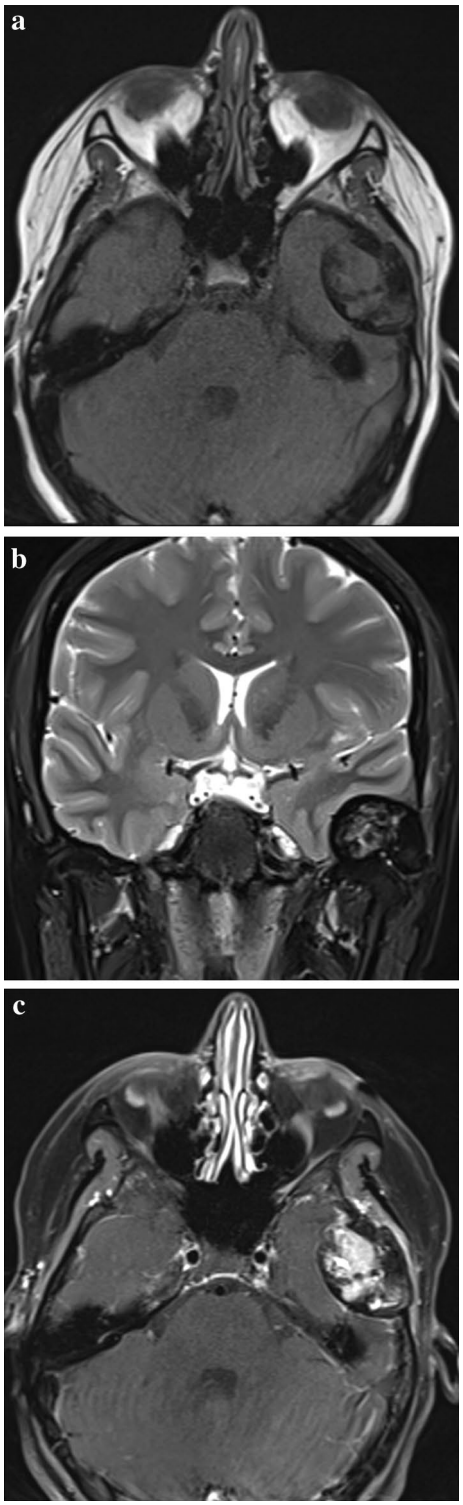

Fig. 2 MRI. **a** Axial T1-weighted image showing the expansion of the temporal bone with strong peripheral hypointensity. **b** Coronal T2-weighted image showing peripheral hypointensity with some central patchy hyperintense areas. **c** Axial post contrast T1-weighted image: intense and heterogeneous enhancement

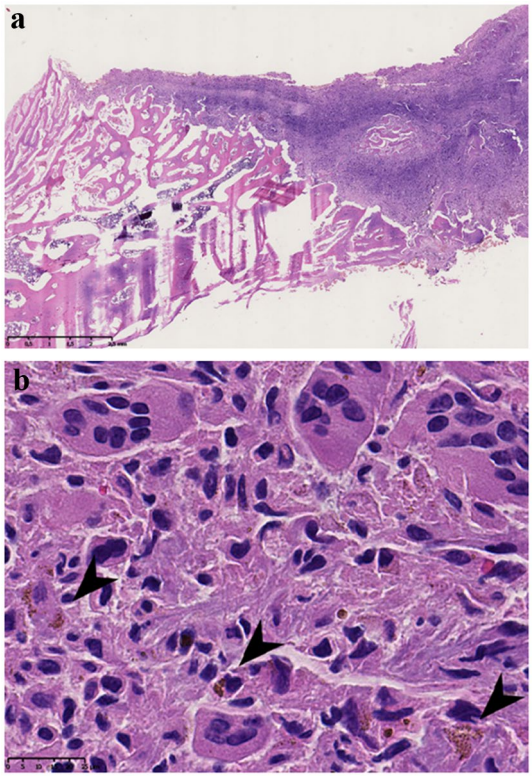

Fig. 3 Histopathology. **a** H&E×1.25 view showing temporal bone structures infiltrated by a hypercellular lesion. **b** H&E×80 revealing numerous multinucleated giant cells interspersed with stroma cells and hemosiderin deposits (black arrowhead)

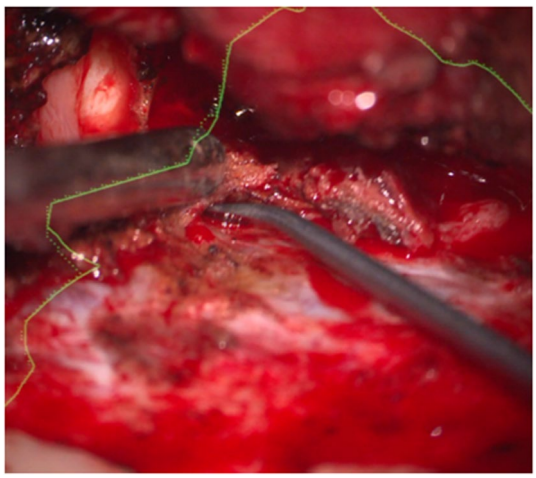

Fig. 4 Intraoperative view: brownish remnant after bulk resection due to adhesions to the dura mater

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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