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What is your diagnosis?

Rare cause of vertigo in a child

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1. Description

A three-year-old child presented with isolated balance disorder while on holidays, associated with repeated falls and instability, with no history of head injury. Head and temporal bone CT scan was performed and concluded on normal imaging, particularly excluding a brain tumour. A diagnosis of otitis was proposed and the child was treated with oral antibiotics. Three weeks later, the child's mother returned to the clinic,

as her child's condition remained unchanged. At this second visit, the child was a febrile and pain-free, poorly cooperative, but in good general condition. The eardrums presented a very slightly serous appearance, and a small wound of the right external auditory canal was observed. Walking and videonystagmoscopy were normal, as was the audiometric examination. The temporal bone CT scan with axial and coronal sections performed 3 weeks previously is presented below (Fig. 1a and b).

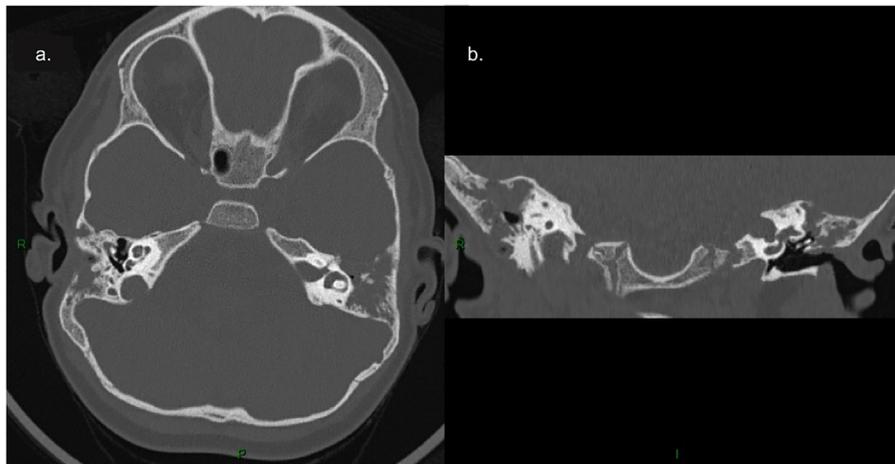


Fig. 1. Unenhanced temporal bone CT scan, (a) axial section, (b) coronal section.

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2. Response: Langerhans cell histiocytosis

The CT appearance is suggestive of temporal Langerhans cell histiocytosis, with signs of bilateral and multifocal temporal bone lysis. A lesion of the tegmen tympani and partial lysis of the walls of the left superior and posterior semicircular channels were also observed. Follow-up temporal bone CT scan demonstrated deterioration of the bone lysis.

Urgent histological examination of bone biopsies obtained via mastoidectomy confirmed this diagnosis: Langerhans cell histiocytosis (eosinophil granuloma). The child was then referred to the paediatric haematology unit, where treatment with vinblastine and corticosteroids was urgently initiated. After 7 months of follow-up, MRI and CT imaging revealed complete bone reconstruction on the right and partial reconstruction on the left with normal mastoid air cells.

Langerhans cell histiocytosis is a rare disease with a peak frequency between the ages of 1 and 3 years. It can affect various organs [1]. Temporal involvement is observed in less than 20% of cases of histiocytosis [2,3] and can be responsible for sometimes profound sensorineural hearing loss [4]. This diagnosis must be rapidly considered in a child presenting with unilateral or bilateral chronic otorrhoea, especially in the presence of temporal

oedema, granulomas or polyps in the external auditory canal, and especially associated vertigo. The imaging appearance of clearly demarcated temporal bone lysis is highly suggestive, especially when the lesions are bilateral. The diagnosis is confirmed by histological examination of mastoid bone biopsy. Early diagnosis and management can prevent complications related to destruction of the anterior and posterior vestibule.

Disclosure of interest

The authors declare that they have no competing interest.

References

- [1] Donadieu J, Héritier S. [Child Langerhans cell histiocytosis]. *Presse Medicale Paris Fr* 1983 2017;46:85–95, <http://dx.doi.org/10.1016/j.lpm.2016.09.013>.
- [2] Saliba I, Sidani K, El Fata F, Arcand P, Quintal MC, Abela A. Langerhans' cell histiocytosis of the temporal bone in children. *Int J Pediatr Otorhinolaryngol* 2008;72:775–86, <http://dx.doi.org/10.1016/j.ijporl.2008.02.001>.
- [3] McCaffrey TV, McDonald TJ. Histiocytosis X. of the ear and temporal bone: review of 22 cases. *The Laryngoscope* 1979;89:1735–42, <http://dx.doi.org/10.1288/00005537-197911000-00004>.
- [4] Saliba I, Sidani K. Prognostic indicators for sensorineural hearing loss in temporal bone histiocytosis. *Int J Pediatr Otorhinolaryngol* 2009;73:1616–20, <http://dx.doi.org/10.1016/j.ijporl.2009.07.010>.