

## Leptomeningeal cyst in a adult: a rare incidental finding

Published on 11.02.2015

**DOI:** 10.1594/EURORAD/CASE.12342

**ISSN:** 1563-4086

**Section:** Neuroradiology

**Area of Interest:** Neuroradiology brain

**Procedure:** eLearning

**Imaging Technique:** MR

**Special Focus:** Trauma Case Type: Clinical Cases

**Authors:** Arribas García, J\*; Blanco Cabellos, JA\*; Ossaba Vélez, S\*; Galobardes, J\*

**Patient:** 69 years, male

### Clinical History:

Incidental finding in a cerebral MRI study.

### Imaging Findings:

Our patient is a 69-year-old man. As an incidental finding, we found a temporal area of parenchymal gliosis (Fig. 1, 2). It was associated with an extraaxial small collection hypointense on T1 and hyperintense on T2 without significant contrast enhancement. The bulge was protruding through a temporal skull defect (Fig. 3).

### Discussion:

Leptomeningeal cysts or growing skull fractures are a complication in head trauma in the paediatric population. They occur only in a 0.6 % of skull fractures [1]. In adults they are very rare. They are caused by a progressive enlargement of a fracture due to an underlying tear of the dura. A dural tear with CSF pulse and pulsation of the brain can cause CSF to collect inside the trapped leptomeninges forming a cyst. Mechanical stress can cause also bone erosion and widening at the fracture site. In some cases CSF advance through the bone margins of the fracture to the subcutaneous plane and eventually a palpable mass in the soft tissue is detected [2, 3]. The parietal and temporal bones are the most commonly implicated sites. Sometimes growing skull fractures spontaneously stabilize. CT is useful to assess bone and MRI is more accurate in demonstrating the brain damage.

MRI findings are usually consistent with a cystic lesion of CSF associating a bone defect in the skull and gliosis in the underlying brain parenchyma.

Differential diagnosis is important in order to decide whether biopsy, surgical intervention or follow-up is required. Intradiploic arachnoid cyst may show bone scalloping but no associated skull defect. Lesions causing bone defects may be congenital (dermoid/epidermoid, cephalocele), posttraumatic (leptomeningeal cyst) and iatrogenic (pseudomeningocele). Epidermoid cyst may involve both the inner and the outer tables of the skull and demonstrate marked hyperintensity on DWI. Cephaloceles are herniations of the brain due to congenital fusion defects, they are usually seen in the occipital region in newborns. Pseudomeningoceles are the herniation of CSF or brain parenchyma into the subcutaneous tissue due to a postoperative bone defect.

At the moment surgery is the treatment of choice and removal is recommended to prevent complications.

The post-traumatic leptomeningeal cyst in the adult population is very rare with few cases reported. Our patient was

asked for head trauma antecedent in childhood referring eventually some hit on the head, "like all the children", not particularly strong. Although rare, we can find a leptomeningeal cyst in adults.

**Differential Diagnosis List:** Leptomeningeal cyst in an adult., Intradiploic arachnoid cyst, Epidermoid, Cephalocele

**Final Diagnosis:** Leptomeningeal cyst in an adult.

**References:**

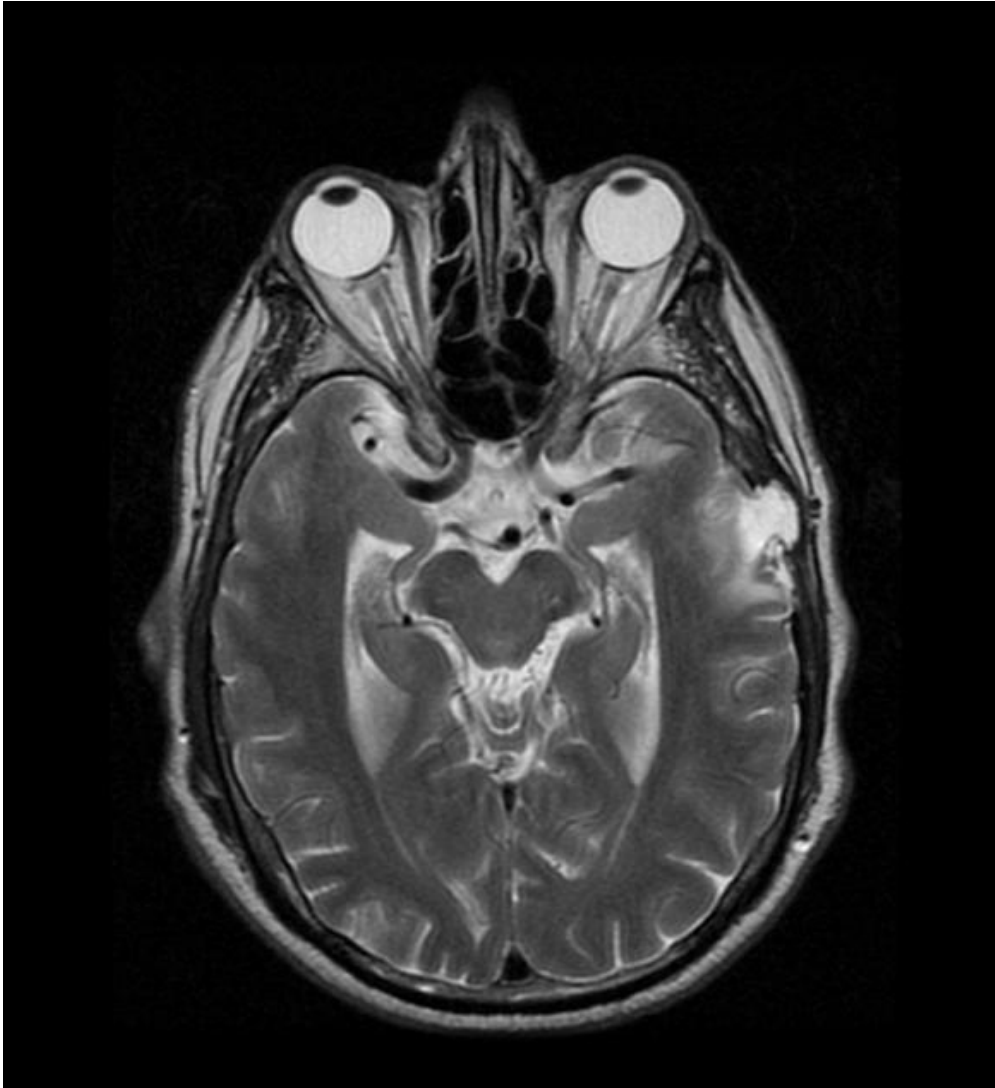
Houra K, Beros V, Sajko T et-al. (2006) Traumatic leptomeningeal cyst in a 24-year-old man: case report. Neurosurgery Jan;58(1):E201 (PMID: [16385319](#))

Kurosu A, Fujii T, Ono G. (2004) Post-traumatic leptomeningeal cyst mimicking a skull tumour in an adult. Br J Neurosurg 18(1):62-4 (PMID: [15040717](#))

Nalls G, Lightfoot J, Lee A, Blackwell L. (1990) Leptomeningeal cyst: nonenhanced and enhanced computed tomography findings. Am J Emerg Med 8(1):34-5. (PMID: [2293831](#))

**Figure 1**

a



**Description:** Axial T2 showed a temporal lesion with gliosis and a hyperintense content equal to that of CSF advancing through a bone defect. **Origin:** Department of Radiology, Hospital Infanta Cristina (Parla), Spain.

**Figure 2**

a

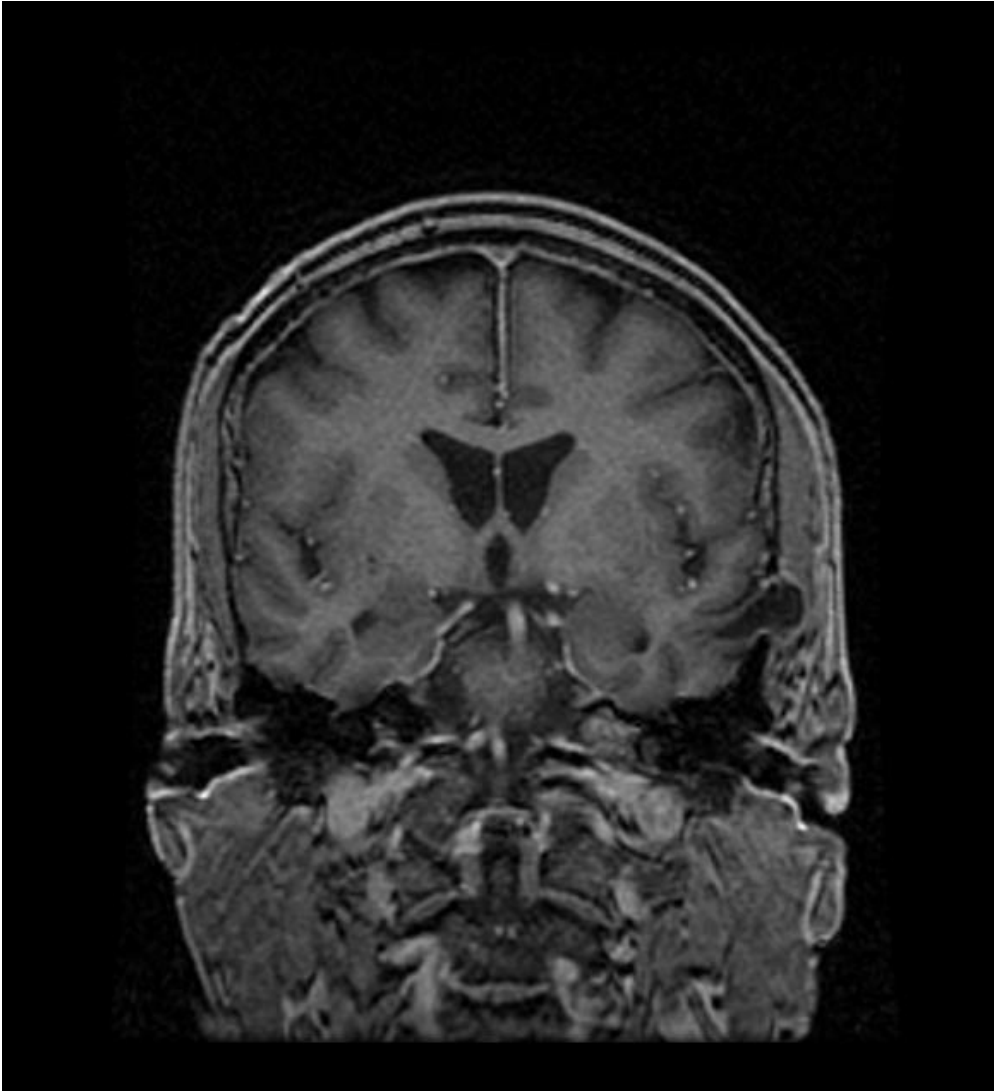


**Description:** T2 coronal image clearly showed the defect in the skull and the extraaxial lesion with slightly irregular borders on the outer side. Also the temporal area of parenchymal gliosis is displayed.

**Origin:** Department of Radiology, Hospital Infanta Cristina (Parla), Spain.

**Figure 3**

a



**Description:** Contrast-enhanced SPGR T1 image showed a hypointense extraaxial small collection through the temporal bone defect. No significant contrast enhancement is seen. **Origin:** Department of Radiology, Hospital Infanta Cristina (Parla), Spain.