

A young man with recurrent bacterial meningitis

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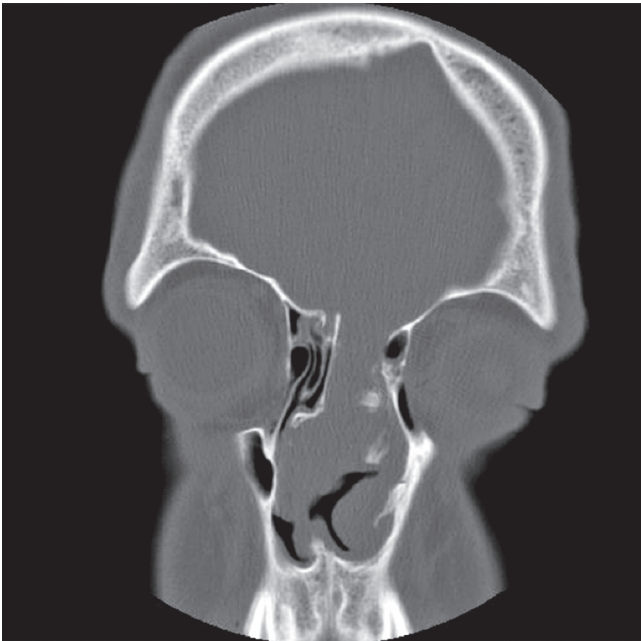


Figure 1: Large defect in the right transtemporal region with a large mass.

A 23-year-old man presented to Rasoul-e-Akram General Teaching Hospital with a two day history of fever, headache, neck stiffness and vomiting. He had suffered similar complaints when he was a child and also two years ago. Several years ago because of a watery discharge from his nose he was operated for a nasal polyp but the pathology report of mass was not consistent with a polyp.

On physical examination, he had fever and neck stiffness and a watery discharge from the right nostril, the other systems were normal.

Laboratory investigations revealed leukocytosis with neutrophilia and cerebral spinal fluid (CSF) sample showed a low glucose concentration and a high protein content. The cell count was 1250/mm³ and was predominantly neutrophilic. *Streptococcus pneumoniae* grew in the CSF culture. He was treated with ceftriaxone and vancomycin for 14 days. A cranial CT scan was requested (Figure 1).

What is your diagnosis?

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ANSWER to PHOTO QUIZ

Intranasal encephalocele

Recurrent bacterial meningitis is a life threatening disease and needs further immunologic or anatomic evaluation [1]. Our patient was assessed for a deficiency in the immune system and this was ruled out. In our patient we detected an inherited defect at the base of the skull with intranasal encephalocele. In the absence of immunodeficiency, anatomical anomalies must be investigated to detect an intranasal encephalocele [2].

Lieb et al. reported that all patients with recurrent bacterial meningitis suffered from an anatomical lesion [3]. Tebruegge found that nearly 59% of the cases with recurrent bacterial meningitis were due to anatomical defects, 36% related to immunodeficiency, and 5% to parameningeal infections [4].

The intranasal encephalocele is accompanied by recurrent meningitis, since an intranasal encephalocele presents with a mass in the nose. It may be mistaken for a nasal polyp and removal can be fatal [5]. Therefore imaging should be done in patients with an intranasal mass to detect an encephalocele. In our patient, the prior surgery on the nasal mass led to a cerebrospinal fluid leak.

Dias reported a patient with bacterial meningitis. A paranasal X-ray showed a mass in the right nostril and a cranial CT scan showed a large defect in the right transthemoidal region with a mass. The patient was treated by ceftriaxone and then operated for closure of defect. At follow up, 6 months later she was doing well [2].

In patients with recurrent bacterial meningitis by *Streptococcus pneumoniae* cranial dural defects should be considered, gram negative bacilli suggest spinal dural defects, and meningococci suggest an immunologic deficiency [6].

Vaccination against *S.pneumoniae*, *H.influenzae* type b, and *N.meningitidis* is recommended in cases of recurrent bacterial meningitis. However, there are conflicting data about the efficacy of vaccination in cases of meningitis due to an anatomical defect [7].

Nasal meningoencephalocele is an uncommon anomaly and needs a high index of suspicion for diagnosis. Biopsies of such lesions without imaging are contraindicated [8].

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