Recurrent Bacterial Meningitis Caused by Transethmoidal Encephalocele

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An 18-year-old woman was admitted to hospital with recurrent fever, headache, and vomiting on six occasions over the past seven years. Each time she was diagnosed with bacterial meningitis based on cerebrospinal fluid (CSF) tests, and fully recovered after treatment with ceftriaxone intravenously.

During the current admission, she had nuchal rigidity. Assays of CSF showed decreased levels of glucose and chloride, and elevated levels of protein and nucleated cell counts (mostly polymorphonuclear cells). Bacterial culture of CSF was negative. She was diagnosed with recurrent bacterial meningitis (RBM). To determine the cause, she had a nasal bone CT scan that revealed a transethmoidal encephalocele (Figure 1). The diagnosis was confirmed by nasal fiberscope examination (Figure 2). No anosmia and rhinorrhea were noticed. Following treatment with ceftriaxone intravenously for two weeks, she fully recovered, but refused surgical intervention.

Approximately 5% of cases with RBM are associated with congenital meningocele/meningoencephalocele, and about 80% of them have the first episode in childhood. [1]

Reference
Figure legend

Figure 1. The findings of nasal bone CT scan

Nasal bone CT scan shows bony defect in the right lamina cribrosa with herniation of encephalocele into the superior nasal cavity (arrows). A, coronal; B, sagittal; C, axial.

Figure 2. The findings of nasal fiberscope examination

Nasal fiberscope examination reveals a solid mass with complete membrane in the right olfactory cleft region. A, distant shot; B, close shot (the lower part); C, close shot (the upper part).
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