Nonsurgical resolution of a brain-stem abscess

Case report

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A case of solitary mesencephalic abscess in a 13-year-old boy is presented. The computerized tomography and clinical pictures, indicating a Weber syndrome and obstructive hydrocephalus, resolved totally 20 days after implantation of a ventriculoatrial shunt and treatment with intravenous chloramphenicol and penicillin. This is the fifth reported case of survival in a patient with a brain-stem abscess, and the first in which this outcome has been achieved without surgical drainage of the abscess.

KEY WORDS • brain-stem abscess • midbrain tumor

SOLITARY abscess of the brain stem is an extraordinarily rare occurrence and is classically considered as having a lethal course. Only four cases have been reported of long-term survival in patients with an abscess of the brain stem, all of them after early surgical evacuation. We are presenting the case of a 13-year-old boy with obstructive hydrocephalus and a Weber syndrome caused by a solitary mesencephalic abscess. He was totally cured after a ventriculoatrial shunt was placed and parenteral antibiotics administered.

Case Report

This 13-year-old boy was in good health until 7 days before admission, when he started to complain of headaches and diplopia. During the next few days, he complained of paresthesia in the left side of the face, later spreading to the entire left side of the body. He also complained of weakness in the left limbs and unsteadiness of gait with lateropulsion toward the left side. His level of consciousness decreased over a 48-hour period.

Neurological examination showed anisocoria. There was paresis of upward gaze and convergent strabismus due to bilateral paresis of both abducens nerves. When convergence was attempted, retraction nystagmus was evident in the right eye. There was a left facial paresis of central type. Deep reflexes were hyperactive in the left limbs, which were hypertonic and paretic. A Babinski sign was present on the left. The boy was slightly stuporous.

A computerized tomography (CT) scan showed a low-density mass in the right side of the midbrain that distorted the posterior part of the third ventricle and caused obstructive hydrocephalus. After intravenous injection of contrast material, the lesion enhanced peripherally, giving a ring-like appearance that was highly suggestive of a brain-stem abscess (Fig. 1A). A ventriculoatrial shunt was implanted, and treatment with chloramphenicol (1 gm intravenously every 6 hours) and penicillin (2 x 10⁶ units intravenously every 2 hours) was instituted. Analysis of cerebrospinal fluid (CSF) and blood obtained during implantation of the shunt showed that they were normal and sterile.

After 24 hours, the boy became completely alert and oriented, and no longer complained of diplopia. Ten days later, blood analysis showed 19,600 white blood cells (WBC) / cu mm with a shift to the left. For the first time, the patient's temperature was found to be slightly elevated, although his neurological symptoms had almost completely remitted. Five days later, he complained of intense abdominal pain. His temperature was high, and the WBC count was 22,500 with a left deviation. A diagnosis of appendicitis was made, and his appendix was removed. Pathological examination of the specimen did not reveal any special
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FIG. 1. Contrast-enhanced computerized tomography scans. A: Scan at admission. The mesencephalic abscess can be seen on the right, distorting the posterior part of the third ventricle and causing hydrocephalus. B: Scan 20 days later, after the patient was treated with antibiotics, showing resolution of the abscess. The end of the ventriculoatrial shunt can be seen in the third ventricle.

features. A few days later, a repeat CT scan showed no traces of the mesencephalic lesion (Fig. 1B).

Thirty days after admission, the patient's neurological symptoms had totally remitted. Antibiotics were discontinued, and he was discharged. One year later he remains asymptomatic.

Discussion

To our knowledge, this is the first case of a brain-stem abscess medically cured without direct surgical attack. Although CSF and blood analysis were not diagnostic of brain abscess and we do not have anatomic pathological demonstration of the nature of the lesion, the CT appearance of the lesion, associated with the clinical course, permits us to make a reasonably certain diagnosis of brain-stem abscess. The source of the abscess could not be determined, as was also true in one-third of the previously reported cases of abscess in this location.

The extraordinary rarity of abscess of the brain stem is demonstrated by the fact that it has been reported in only 0.001% of autopsy material. Clinical experience with this type of lesion is limited to very few cases. Computerized tomography facilitates early diagnosis of brain-stem abscess, permitting effective treatment with antibiotics previous to surgical evacuation. Also, CT provides the possibility of demonstrating the effectiveness of antibiotic treatment which, as in our case, may be enough to result in resolution of the abscess.

References


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