Huge Calcified Epidural Abscess

—Case Report—

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Abstract

A 76-year-old female with an intracranial epidural abscess having a long history of about 30 years is presented. Craniogram, carotid angiogram, and computed tomographic scan showed a huge calcified lesion with hyperostosis at the right parietal region. The abscess appeared to have granulated and calcified due to long-lasting stagnation of the pus.

Key words: intracranial epidural abscess, calcification, hyperostosis

Introduction

Since the introduction of antibiotics in medicine, intracranial epidural abscesses have become rare. Intracranial epidural abscesses sometimes develop without presenting neurological symptoms and occasionally spread to the subdural space or brain. A case of huge calcified epidural abscess with a long history is presented.

Case Report

A 76-year-old female had a fistula at the right parietal region for about 30 years. Periodic purulent discharge from the fistula occurred with dysesthesia at the right parietal region. From July, 1984, the right retroauricular lymph node became swollen. She was diagnosed as furunculus and oral administration of antibiotics was initiated in July, 1985, but the purulence did not diminish. A computed tomographic (CT) scan showed calcification and hyperostosis of the cranium at the parietal region. On September 2, 1985, she was referred to the Department of Neurosurgery, Shimane Prefectural Central Hospital.

On admission, she was alert without neurological abnormalities. She had a fistula approximately 8 mm in diameter at the right parietal region. Although the fistula excreted yellowish pus, no micro-organisms

Fig. 1 Plain craniogram, showing hyperostosis of the skull and underlying calcification at the parieto-occipital region.

could be detected by bacteria or fungi culture. The laboratory examination revealed no leukocytosis or increase in C-reactive protein.

A plain craniogram and a craniotomogram showed thickening of the cranium, with a maximum width of approximately 2 cm, at the right parieto-occipital region. Calcification $4 \times 4 \times 1$ cm in size was observed just under the hyperostosis of the cranium (Fig. 1). A CT scan also showed hyperostosis of the cranium and calcification (Fig. 2).

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Fig. 2 Coronal precontrast CT scan with bone windows shows hyperostosis of the skull and calcification.

Initially, a brain tumor with subcutaneous abscess, such as meningioma, was suspected. On September 6, 1985, the abscess was incised under local anesthesia and the purulent discharge was found to originate under the bone. Although burr-hole irrigation was performed, the purulence did not disappear, so craniotomy was scheduled. Bilateral carotid angiograms showed downward displacement of the right middle meningeal artery at the parietal region and complete obstruction of the superior sagittal sinus by the calcified lesion (Figs. 3 and 4). Based on these findings, a diagnosis of parasagittal epidural abscess was made.

On November 1, 1985, a biparietal wide craniectomy across the sagittal sinus was performed under general anesthesia. The pus underlay an area of the thickened bone with granulation containing calcification, which was dissected as much as possible from the dura mater. The subdural space was found to be intact through a small dural incision. Histological examination showed that the abscess was granulated and the dura was infiltrated by plasma cells. No micro-organisms could be detected by bacteria and fungi staining.

Her postoperative course was uneventful. She was discharged with no symptoms on December 22, 1985, and in good health as of June 21, 1989.

Discussion

Isolated intracranial epidural abscesses are rare and

mostly associated with subdural empyemas or brain abscesses.¹⁾ Some epidural abscesses may develop insidiously with minimal neurological signs and symptoms, and then develop into giant abscesses with or without hyperostosis.^{3,4)} The dura acts as protection against the spread of the abscess, because the dura has a firm attachment to the inner table of the skull.⁴⁾

This case had a long history of 30 years. In spite of the continuous excretion of pus through the fistula, the abscess might have been stable for a long time because of the periodic discharge of the pus. The abscess appeared to have granulated and calcified due to long-lasting stagnation of the pus.

In general, epidural abscesses show a thick, dense, circumscribed ring enhancement on postcontrast CT scans.²⁾ Angiograms usually demonstrate these lesions as avascular masses, but in rare cases, they

Fig. 3 Right external carotid angiogram, lateral view, showing downward displacement of the middle meningeal artery.

Fig. 4 Right common carotid angiogram, lateral view, showing complete obstruction of the superior sagittal sinus.

sometimes show diffuse homogeneous stains fed by the external carotid arterial system.^{3,5)} In this case, the CT scans showed a calcified lesion attached to the thickened cranium and a right external carotid angiogram demonstrated downward displacement of the middle meningeal artery. These findings indicated a calcified epidural abscess.

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