Spinal Subdural Granuloma Caused by Micropulverized Barium Sulphate

Case Report

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It is common practice to use a radio-opaque substance to visualize the anatomy and size of a brain abscess. For initial treatment and long-term follow-up, it is necessary to make the walls of the cavities permanently visible. This can only be achieved by the use of a radio-opaque substance which becomes incorporated in the wall of the abscess. Various substances such as Thorast, Tantalum powder, and Pantopaque have been used. Since 1959, micropulverized barium-sulphate suspension (Steripaque† or Micropaque) has been available, and it has been used preferentially in this department since 1960. Although “ordinary” barium sulphate is known to produce granulomatous lesions when injected into serous cavities (Kay, 1954; Burrows, 1962), this complication has not been reported with the use of the modified material. Clarke, et al., and Alexander, et al., have reported its satisfactory use in the study of brain abscesses, without encountering complications.

We are reporting a patient with a cerebellar abscess and posterior fossa subdural empyema in whom the successful use of Steripaque was complicated by the development of a subdural granulomatous reaction.

Case Report

First Admission. An 11-year-old school girl was admitted on December 10, 1965, for the treatment of a right cerebellar abscess. A mid-occipital subcutaneous dermoid cyst was present which had become intermittently infected over the years, although not recently. Ten days before admission, she had developed increasing headaches, vomiting, and unsteadiness. On admission she was drowsy and showed bilateral papilledema and signs of a right cerebellar lesion. The raised intracranial pressure was treated by emergency bifrontal-ventricular drainage. Myodil ventriculography confirmed the presence of a right-sided posterior fossa space-occupying lesion.

Operation. On December 12, 1965, a large, right-posterior-fossa subdural empyema and a cerebellar hemisphere abscess were aspirated; a catheter was inserted into the abscess for drainage and the instillation of antibiotics. The abscess cavity was washed out with saline, and 2 ml of Steripaque with 100 mg Streptomycin and 10,000 units of Penicillin were injected into it. Radiographs were then taken (Fig. 1). The superficial part of the dermoid cyst was excised, and a small funnel-shaped opening through the occipital bone was noted.

The infecting organism was a Penicillin-resistant Staphylococcus Pyogenes. The cavity was accordingly irrigated at intervals with a solution containing Neomycin, Polymyxin, and Zinc Bacitracin, and parenteral Ampicillin was given for 10 days.

Postoperative Course. Postoperative recovery was rapid and uneventful, and shrinkage of the abscess cavity was satisfactory (Fig. 2). The patient was discharged 3 weeks after the operation, with only minimal right-sided cerebellar signs. Six weeks after the operation, however, she began to complain of interscapular cramp-like pains, which were aggravated by lying on her back. The pains gradually increased, requiring morphine, and began to radiate into the pre-
Fig. 1. Radiographs of the skull showing catheter lying in the cerebellar abscess, and Steripaque in the abscess and in the posterior fossa subdural space. Note also Myodil and air in the ventricular system. Top: Anteroposterior view. Bottom: Lateral view.