Case Reports

Chronic Brain Abscess Discovered 31 Years after Intracerebral Injury by Missile

Report of a Case

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The incidence of brain abscesses following intracranial injuries from missiles has been found to range from 8.5 to 16 per cent.12,16,18 This ratio increases if fragments of bone and metal are retained.8,12,16,18 The abscess usually becomes manifest clinically within 3 to 5 weeks,11,16 but in patients with retained fragments of bone and shell symptoms of abscess may develop many years after the injury.8 Symptoms appear abruptly if the abscess ruptures into the ventricles or the subarachnoid space, but may develop slowly, resembling an expanding intracranial mass.7 Following is the report of a case of abscess discovered 31 years after injury.

Report of Case

H.H. sustained a head injury in 1951 at the age of 19 as a result of an explosion aboard a Navy vessel, the USS Colorado. A fragment of shell lodged in his left occipital lobe. No intracranial surgical treatment was undertaken. He recovered and remained on active duty until 1953, when he was given a medical discharge following a "heart attack". As a civilian, he was gainfully employed as a building custodian.

In February, 1958 the patient was involved in a car accident because he failed to see a vehicle approaching from the right, and suffered a brief loss of consciousness immediately afterward. He was released after 3 days of observation at the local hospital.

In November, 1959 the patient had a grand-mal seizure with urinary incontinence, preceded by an aura during which he smelled "sickening, sweet, old flowers". He was admitted to the Veterans Administration Hospital in Indianapolis.

Examination. Positive neurological findings were a right homonymous hemianopsia, dysnesia and mild constructional dyspraxia. Blood count, urinalysis and blood-urea nitrogen were within normal limits. Electroencephalogram showed dyshytrhythmia grade I in the left temporal parietal area. Neuropsychological testing disclosed an I.Q. of 100 and Impairment Index of 8 (normal 4–5).14 Roentgenograms of the skull disclosed a metallic fragment in the left occipital area. Carotid angiography indicated a mass in the left temporal parietal region.

Operation. On Nov. 22, 1959, a left parietal temporal osteoplastic craniotomy was performed. Biopsies of the left midtemporal gyrus and posterior parietal area revealed only "gliosis".

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Discussion

Since the patient had 28 relatively productive and symptom-free years after the injury, the possibility of an abscess, in spite of the intracerebral foreign body, was not entertained. The clinical significance of the cysts that were found at sites of previous biopsies remains uncertain. There seems to be little doubt that the abscess had a direct bearing on the patient's clinical course, as there was histologic evidence of acute, as well as chronic, inflammatory reaction in the surrounding tissues.

Nauwerk reported a case of fatal brain abscess 38 years following a bullet in left frontal lobe. Another abscess, 27 years after injury, was cited by the same author. Similar latent periods following injury prior to the diagnosis of abscess have been reported by King, Cairns and Donald, and Drew and Fager.

Recognition of a chronic brain abscess, as pointed out by Grant, requires a high index of suspicion in a patient with previous penetrating

Fig. 1. RISA scan (~4 hrs.) showing left occipital concentration near midline.

Fig. 2. Photomicrographs of wall of abscess (X80). (A) Inflammatory changes and reactive astrocytes surrounding the abscess. (B) Capillary proliferation in the wall of the abscess.