PNEUMOCEPHALUS SECONDARY TO A PENETRATING WOUND OF THE BRAIN

SIDNEY W. GROSS, M.D.*

(Received for publication December 18, 1947)

Traumatic pneumocephalus has been reported from time to time in patients with skull fractures involving the frontal, ethmoid or sphenoidal sinuses. Most writers on this subject recall Luckett's case, the first in which air was detected in the intracranial cavity by means of x-ray studies. There are few references in the literature to pneumocephalus resulting from a penetrating wound of the brain, though it is likely that many cases have been overlooked in war casualties.

CASE REPORT

Private B, a Czech soldier, incurred a penetrating wound of the right frontal region when a shell exploded. He was admitted to a U. S. Army General Hospital in Germany about 12 hours later. When examined he was drowsy but easily roused. It was not possible to obtain

![Fig. 1. (left). Lateral view of skull, showing a well outlined and normal lateral ventricle. At the level of the foramen of Monro there is seen the outline of a metallic foreign body (shrapnel).](image)

![Fig. 2. (right). Postero-anterior view.](image)

an adequate account of the events following the injury because of language difficulty. The patient could not speak or understand either English or German. He indicated that he had a severe headache. There was a small irregular wound of entrance in the right frontotemporal region. He was not in shock; his pulse rate, blood pressure and temperature were within normal limits. Neurological examination disclosed only a slight left central facial weakness.

Roentgenograms of the skull (Figs. 1 and 2) showed a defect in the right frontal area with a cluster of bone chips in the right frontal lobe. A metallic foreign body was present in the midline in the region of the foramen of Monro. Both lateral ventricles were filled with air. Debridement and a plastic repair of the defect in the dura was followed by a satisfactory result. The patient became free of headache 2 days after the operation. He became alert and

* 8 East 88th Street, New York 28, N. Y.
interested in his surroundings. At the time of his transfer to another hospital 10 days later he was up and about. For obvious reasons a follow-up report is not available.

COMMENT

In the usual case of traumatic pneumocephalus there is a skull fracture involving one of the paranasal sinuses or mastoids. In the sinuses and mastoids air can be compressed by the act of sneezing, coughing or swallowing. Thus, if a communication exists between the intracranial cavity and these pneumatic spaces, air under pressure may be forced into the subdural, subarachnoid or ventricular cavities.2

In the patient herein reported there was a penetrating wound of the brain with the lodge ment of a foreign body in the ventricular system, thus producing a free communication between the ventricles and the outside. When the site of entrance of the foreign body was in a dependent position cerebrospinal fluid escaped and air entered. Treatment requires no special comment. As in all penetrating and perforating brain wounds early and thorough debridement and a tight dural closure are indicated. In most instances a graft of temporal fascia or pericranium is required to bridge the defect in the dura.

REFERENCES


NEOPLASM OF THE CHOROID PLEXUS OF THE LEFT LATERAL VENTRICLE

HARRY WILKINS, M.D., RONALD SMITH, M.D., AND BÉLA HALPERT, M.D.

Department of Surgery and Department of Pathology, University of Oklahoma
School of Medicine, Oklahoma City, Oklahoma

(Received for publication January 5, 1948)

Neoplasms may arise from the cells covering the choroid plexuses of either of the lateral, of the 3rd, or of the 4th ventricles. They usually have the structure of a papilloma: columnar or tall columnar cells are mounted on delicate connective-tissue stalks. This arrangement may be orderly with little variation in the height of the cells or there may be marked variation with loss of polarity of the cells and heaping up of the cell nuclei into several rows. At times the growths remain on the surface, or they invade the subjacent brain tissue. Because of the variations in structural patterns and extent of invasion some of the growths are regarded to be benign, others malignant.

A total of about 90 cases of neoplasms arising in one of the choroid plexuses have been reported to date (Herren,4 Posey,5 Walker and Horrax11). While there is no general agreement as to the nature of these neoplasms, approximately 23 of them were considered to be cancerous (Walker and Horrax,11 Hirsch and Elliott,6 Van Wagenen,10 Dandy,2 Graves and Flies,4 Turner and Simon,8 Drucker,3 Musaclyn,7 and Berger7). Among the total number of cases on record, according to Posey,8 only 22 were diagnosed clinically as brain tumors and approached surgically. An additional case has since been recorded by Walker and Horrax11. Complete recovery was reported in 5 patients. Among these, 4 of the neoplasms arose in the 4th ventricle and 1 in a lateral ventricle; this was the only one occurring in a child (Van Wagenen16). Because of the peculiar structure and behavior of neoplasms arising in one of the choroid