TRANSVENTRICULAR WOUNDS OF THE BRAIN*

MAJOR GORDON T. WANNA MAKER, M.C., U.S.A.†
Section of Neurological Surgery, Tokyo Army Hospital, Tokyo, Japan

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This report is based on 105 consecutive Korean battle casualties of surgically verified transventricular wounds of the brain treated at Tokyo Army Hospital from September 1950 through March 1952. The over-all mortality rate was 10.47 per cent. The value of early definitive neurosurgery is brought out by a comparison of the operative results before and after the establishment of an organized neurosurgical team in Korea in February 1951.

DEFINITION AND DIAGNOSIS

Wounds of the ventricle in this series were produced by missiles or foreign bodies passing through or into the ventricular system. Actual visualization of the opening into the ventricle at surgery was the basis for diagnosis. There was no definite clinical syndrome characteristic of transventricular wounds even though most of the patients had high temperatures and stiff necks. The physical findings depended upon the area of the brain involved. A diagnosis of ventricular penetration was suspected when x-ray films showed evidence of the missile canal, outlined by bone fragments, passing through the position normally occupied by the ventricles. The lateral ventricles were most frequently involved, accounting for all cases except 3 in which the 3rd ventricle was penetrated. There were no cases of penetration of the 4th ventricle.

NEUROSURGICAL ORGANIZATION

Before going into the statistical analyses of these cases, it is advisable to give a picture of the over-all neurosurgical organization in the Army during the progressive stages of the Korean campaign covered in this report. During July and August 1950 no accurate records were kept. From September 1950–February 1951, the Neurosurgical Service at Tokyo Army Hospital was the only Army Neurosurgical Center in the Far East Command. In February 1951, a neurosurgical team was established in Korea and func-

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† Present address: Brain Tumor Registry, Yale University School of Medicine, New Haven, Connecticut.
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tioned at the level of an Evacuation Hospital. With the arrival of additional personnel, a mobile neurosurgical team was established in Korea in October 1951 at the level of a Mobile Army Surgical Hospital. From September 1950 the entire personnel was under the direction of Lt. Col. A.M. Meirowsky,14 Neurosurgical Consultant of the Far East Command. All doctors received an initial period of instruction at the Center at Tokyo Army Hospital. Records of all patients evacuated from the neurosurgical teams in Korea and of all patients admitted to the Tokyo Army Hospital Center were maintained. From the onset the Center served as the second echelon of treatment. All Army neurosurgical casualties, many Marines, Air Force, and United Nations personnel were included in the series. The fact that this report is based mostly on the results of the second echelon of treatment no doubt contributes to our low mortality rate. For this, allowance must be given. As the late Sir Hugh Cairns5 stated, “The farther from the front the better the mortality statistics.”

STATISTICAL ANALYSIS

The 105 consecutive casualties here reported were treated on the Neurosurgical Service, Tokyo Army Hospital, during the period of September 1950 through March 1952. Only 10 of these patients with transventricular wounds had not undergone prior surgery. Before the establishment of a neurosurgical team in Korea in February 1951, the majority of the patients were operated upon at various installations in Korea and Japan, frequently without the benefit of a neurosurgeon. The value of early definitive neurosurgery was again demonstrated. As Eden6 aptly put it, “The surgeon who first operates on an open brain wound, makes or mars it. There is no first aid operation. Ideally the initial operation should be the final and complete one. Failure to obtain primary closure or inadequate removal of indriven bone fragments frequently spelled a vicious circle of cerebral fungus, brain abscess and meningitis.”

In 17 (53 per cent) of the 32 patients admitted to Tokyo Army Hospital prior to the establishment of an Army neurosurgical team in Korea (Group I, Table 1), there was evidence of meningitis or brain abscess. Of the 32 patients, 31 required reoperation for the causes shown in Table 2.

Of the 73 patients admitted from March 1951 to March 1952 (Group II, Table 1),