CASE REPORTS AND TECHNICAL NOTES

CEREBRAL SCHISTOSOMIASIS

REPORT OF A CASE WITH SURGICAL REMOVAL OF AN INTRACEREBRAL MASS
OF SCHISTOSOMAL OVA*

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The presence of American troops in the islands in the southwest Pacific and in Japan,
Formosa, the Celebes and Burma has focussed a good deal of attention on the problem of
fluke infestations in humans. A large number of such infestations have been encountered and
will doubtless continue to be encountered in our forces. In the case that is to be reported in
this communication, a mass of schistosomal ova was found, surgically, in the brain. In view of
the frequency of human infestation with schistosomes and the relative infrequency of the
cerebral complication, this case is herewith presented for analysis.

REPORT OF CASE

J.J.F., a 32-year-old white male soldier with no significant past or family history, first
landed on Leyte in the Philippine Islands sometime in November 1943. The area in which he
was stationed was later discovered to be a source of schistosome infection. Two men in his
company were evacuated to the rear echelons 2 months later with a diagnosis of schistosomal
dysentery. He, himself, was perfectly well, without any clinical evidence of early schisto-
omiasis until Mar. 27, 1945 when he suddenly had a severe grand mal seizure, observed by a
medical officer. He felt perfectly well after this, until the next day when he suddenly began to
complain of a bizarre taste in his mouth. This lasted only a few moments and was followed
again by a severe grand mal seizure. Immediately after this seizure he had a severe generalized
persistent headache, radiating into the cervical region. At the same time he noted the onset of
diplopia and began to fall to the right when walking. This unsteadiness rapidly became so
severe that walking was impossible. Three weeks after the first seizure, he began to notice
slurring of his speech. On May 16, 1945 he was admitted to the Mayo General Hospital.

Examination revealed bilateral papilledema, measuring 3 D. in the right eye and 1 D. in
the left. He had alternating convergent strabismus due to bilateral external rectus paresis and
causing homonymous diplopia, bilateral corneal anesthesia, anisocoria (left greater than the
right), bilateral enlargement of the blind spots and faint horizontal nystagmus in extreme
lateral gaze to the left. The other pertinent findings were mental dullness, positive Romberg
sign with falling to the right, mild intention tremor in both upper extremities, adiadokokinesia
in the left upper extremity, patchy sensory loss of the entire left side of the body and bilater-
ally positive Babinski signs. The remainder of the clinical examination was negative except
for the fact that the patient was somewhat confused and disoriented.

X-ray examination of the chest was negative. X-ray films of the skull revealed sharpening
and erosion of both anterior clinoids, most marked on the right with some reduction in size of
the latter. Electroencephalogram revealed, on a low voltage fast background, much 2 to 6
per second activity of moderate voltage in all leads. The right mid and posterior temporal
leads showed higher voltage than the left. The most marked difference was noted in the
anterior temporal leads, the right showing baseline sway and 1 to 3 per second waves and the

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left showing high voltage 2 to 4 per second waves (Fig. 1). Bipolar leads showed no definite phase reversal. This pointed to a lesion deep in the temporal region.

Operation. On May 23, 1945 a ventriculogram was performed, revealing a shift of the entire ventricular system to the left, most marked anteriorly (Fig. 2). Accordingly, a large right frontotemporal osteoplastic craniotomy was performed exposing the dura, which was normal in appearance but under markedly increased pressure. A portion of the temporal bone at the hinge of the flap was rongeured away to leave a subtemporal decompression. On opening the dura, the cortex appeared pale and flattened with the characteristic appearance of cortex overlying tumor. At a depth of 1.5 cm. below the surface of the cortex, a greenish-pink mass about the size of a peanut was exposed and was easily shelled out. Frozen section revealed many characteristics of a granuloma on a parasitic basis. In view of this the entire area, consisting of many such masses varying in size from that of a wheat seed to that of a walnut, and totaling about the size of a tangerine orange, was resected by shelling out some portions and aspirating others. Careful examination of the cavity thus produced revealed no gross evidence of further involvement and the wound was closed in the usual manner without drainage.

Course. The patient made an uneventful recovery. Immediately following operation, there was a complete left hemiplegia. In 3 weeks he was able to walk perfectly well and in 6 weeks could use the entire left upper extremity quite well except for some clumsiness and "stiffness" of the fingers. Six weeks following operation 50 cc. of fuadin were administered intramuscularly in doses of 5 cc. every other day. At the present time (4 months postoperative), there is no diplopia and no papilledema. The blind spots are normal in size. There is no swayling in the Romberg position. The deep reflexes are hyperactive throughout and there is a positive Babinski on the left side. There have been 3 grand mal seizures.

Following operation stool examinations revealed the presence of schistosomal ova. The white blood count was 10,300 and there were 3 per cent eosinophiles. There were no ova in repeated urine specimens. Before operation the white blood count was 11,100 and there were 9 per cent eosinophiles. Cerebrospinal fluid from the ventricles showed 15 mgm. total protein

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Fig. 1. Electroencephalogram. Note the difference in the anterior temporal leads.