order to obtain an accurate diagnosis of the side of the lesion and of the collateral circulation, both of major importance for proper surgical therapy.

4. The use of the Selverstone clamp made this patient's management easier, considering the presence of arterial spasm on the side opposite to ligation, and prevented an additional operative procedure.

5. The surgical treatment of arteriovenous fistula between the internal carotid artery and the cavernous sinus, as described by Dandy, proved to be satisfactory in this particular case.

**LEFT FRONTOPARIETAL MENINGIOMA WITH QUADRIPLEGIA**

**REPORT OF CASE**

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Herniation of varying degrees of the tonsilla cereblli into the upper cervical canal from increased intracranial pressure commonly occurs. A herniation of the tonsilla from a large supratentorial left frontoparietal meningioma which caused compression of the upper cervical cord and medulla and resulted in quadriplegia as an initial neurologic sign and symptom appears to be of sufficient interest to record.

It must be emphasized, however, that cases of quadriplegia or paresis have been reported, either as a result of multiple meningiomas or meningiomas in the vicinity of the foramen magnum. Ecker* reported a case of meningioma which arose from the clivus, anterior to the medulla, in which there was involvement of all extremities. Fiehl, Reese and Steelman* in reporting 3 unusual cases of meningioma, described one case in which the meningioma was located at the level of the foramen magnum and resulted in the motor involvement of all extremities.

The following case is presented because of the puzzling and bizarre symptoms and signs which resulted from a single left frontoparietal meningioma that weighed 310 gm., and also to demonstrate the efforts that were necessary for the successful recovery of the patient.

A 44-year-old white woman in a semicomatose condition was admitted to the hospital on July 7, 1948. Her history was obtained from her family. Until her husband died in 1940 from an automobile accident, she had apparently been in good health. Since that time, however, she had become very nervous but was apparently well in every other way and was able to manage her own affairs.

Three years before admission the patient had remarried and had been doing well except for apparent nervousness which persisted and was noticed by her husband and relatives. In March 1948 she fell on the ice but did not lose consciousness. Since that time, however, she walked with some difficulty and had fallen several times because of weakness of the legs. This weakness became more pronounced during the last 2 months, and 2 weeks before admission the patient could not arise from a sitting position; she noticed that her arms were becoming weak and that she was unable to use her fingers or feed herself. She also had difficulty in swallowing and began to have sphincter disturbance of the rectum and bladder. Further questioning of the husband revealed that the patient had complained of a severe

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headache 6 months previously but was free from headaches when symptoms of motor power disturbance began. There was no history of convulsions.

Examination. The patient appeared well nourished but was in a semicomatose condition from which she could be aroused only by painful stimuli. Her speech was of the bulbar type. Percussion, palpation and auscultation of the skull were normal. The pupils were equal and reacted to light and accommodation, the visual fields appeared normal by gross tests and the optic disks showed a moderate papilledema with secondary atrophy. A slight emotional facial weakness on the right side and a marked nuchal rigidity were present. Sensory changes were not noted. The patient was unable to swallow water without aspirating it into the trachea. The four extremities were spastic. Spasticity was greater on the left side than on the right and was more marked in the lower extremities than in the upper. The patient was unable to move her arms or legs without support and was unable to raise her shoulders or flex her arms higher than the level of the breast on either side. The movement of her right hand was somewhat better than the left; however, she could not grasp objects. There was a bilateral positive Hoffmann reflex which was more marked on the left. The Babinski reflex was bilaterally positive. The deep reflexes were markedly hyperactive throughout and greater on the left side. The presence or absence of ataxia could not be determined because of the weakness of the extremities. A definite sensory level could not be outlined; however, there were vasomotor changes of the skin below the clavicle. There was a generalized atrophy of the arms and legs to a slight degree. The anal sphincter was relaxed and the reflex was absent.

Roentgenograms of the skull demonstrated increased vascularization in the left frontoparietal region. There was no evidence of a platybasia and the pineal body could not be visualized.

A presumptive diagnosis of a tumor in the region of the foramen magnum was made.

Ventriculograms demonstrated a considerable degree of displacement of the ventricular system toward the right with depression of the anterior portion of the left lateral ventricle as well as a marked displacement of the bodies of the ventricles to the right (Figs. 1 and 2).

1st Operation. A craniotomy was performed (J.L.P.) immediately after ventriculography and a large left frontoparietal meningioma was removed.

Figs. 1 and 2. Ventriculograms. (Left) Anteroposterior. (Right) Posterior anterior.