MENINGIOMA WITH MALIGNANT TRANSFORMATION AND IMPLANTATION IN THE SUBARACHNOID SPACE

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This case is reported because distant implantation from a meningioma is found so rarely. In the John Sealy Hospital, University of Texas, Medical Branch, Galveston, Texas, from September 1892 to July 1958 there have been 632 histologically confirmed cases of primary intracranial tumors including surgical and autopsied cases. Of these, there have been 105 cases of meningioma, the present being the only one in which distant implantations were suspected or found in the subarachnoid space. However, we must emphasize that approximately one-third of the patients in our series are alive at present. Of those who were known to be dead in 1954, autopsy was performed on only 25 and the spinal cord was not completely examined in most of these cases. Therefore, implants may be more frequent than we have assumed in the past.

CASE REPORT

#5069A. E.I., a 39-year-old right-handed white female, entered John Sealy Hospital for the first time on Sept. 28, 1957 with the chief complaints of progressive loss of speech, progressive right-sided weakness and a “growing tumor” on the left side of the head.

Past History. In 1947 following a 1-month history of diplopia, anemia and loss of weight, the patient had a left frontal meningioma removed elsewhere. She was up and about in 6 weeks, doing her own housework, but was noted to have a residual drag of her right heel.

In 1952 the patient’s speech became altered and the right leg became markedly paretic. A second craniotomy was performed, recurrent tumor was removed and the bone flap was left out. Convalescence was prolonged with speech returning slowly over a period of 6 months, and, though able to care for her own needs, she was never able to return to doing her own housework.

In February 1956 progressive right-sided weakness began to develop and she was placed on anticonvulsant therapy for generalized seizures. Six months prior to admission the family noted an alteration in the patient’s speech and memory. Two months later she was observed to have difficulty in balance. Three months before admission the patient was unable to complete sentences and the right arm and leg were progressively weakening. One month later she complained of pain in the back for the first time. Over the next 4 weeks both legs had become progressively weak, movement of the left causing pain so that the patient took to her bed. At this time urinary retention was evident and frontal headaches were frequent. For about 1 year the scalp over the operative site had progressively enlarged as a single “lump,” but adjacent additional “lumps” were noted in the month prior to admission.

Initial Examination (September 1957). The patient was a well developed, well nourished, euphoric, aphasic white female with marked paresis of both legs and right upper extremity. On inspection of the head, two healed scalp incisions and a pulsating frontoparietal defect on the left were noted. The scalp lay directly over a palpable firm, lobulated nonmovable mass occupying the left frontoparietal area and projecting slightly above the surrounding nontender edge of the bone. The patient was euphoric and had a receptive and expressive aphasia.

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so that sensory findings were unreliable, being limited to perception of pain and touch. Olfactory sensation could not be tested reliably. Bilateral papilledema was present and visual acuity was limited to counting fingers at four feet. The remainder of the cranial nerves were intact. Deep tendon reflexes were increased bilaterally, more so on the right, and a bilateral extensor plantar response was elicited. An indwelling catheter was in place.

Roentgenograms of the skull showed a postsurgical defect in the left frontoparietal region. Films of the thoracic spine on Oct. 19, 1957 revealed no abnormality. Count of blood cells and blood serological test for syphilis (VDRL) were normal. The urine was loaded with bacteria and leukocytes. Cerebrospinal fluid on Oct. 9, 1957 was reported as containing over 200 mg. per cent protein.

On Oct. 1, 1957 bilateral carotid arteriography revealed marked displacement of the anterior cerebral arteries to the right on the anteroposterior views (Fig. 1). On the lateral views an irregular arborization of vessels was noted above the orbital plate; this was thought to represent tumor "stain" (Fig. 2).

Operation. On Oct. 3, 1957, following ligation of the left external carotid artery, the left frontal scalp flap was separated from the underlying tumor, and partial removal of over 200 gm. of tumor, histologically a poorly differentiated meningioma, was accomplished with the aid of electrocautery loop. The tumor was observed to extend across the midline and compress the medial aspect of the right frontal lobe.

Postoperative Course. On Oct. 4, 1957 the patient was able to use the right hand better and to express and understand conversation. However, the use of the legs was slightly less than preoperatively and this was ascribed to injury of the anterior cerebral arteries at surgery. By Oct. 8, 1957 no improvement of the legs was noted. Because of elevation of the scalp flap, lumbar puncture was performed with the release of about 40 cc. of dark cerebrospinal fluid. The elevation of the scalp flap did not alter and, because no further fluid was forthcoming from the lumbar subarachnoid space, fluid was aspirated from beneath the scalp flap. Lessening of the receptive and expressive aphasia continued, and hand grips were about equal. Fluid continued to collect under the scalp flap so that every day clear cerebrospinal fluid was aspirated in varying quantities. On lumbar puncture the fluid was always darker and quantities obtained were always less than 10 cc. On Oct. 19, 1957 the legs were without spontaneous movement, and for the first time a sensory level of T8 dermatome was elicited. In addition,