SUMMARY

1. A case of frontal and a case of posterior fossa extradural hemorrhage are presented.
2. Separation of the dura from the skull may occur beneath the site of a severe impact and extradural bleeding takes place into the space thus created.
3. In a severe head injury, without localizing neurological signs of middle fossa hemorrhage, an extradural clot may be found over the surface of the cerebellum or the frontal pole and the site may be indicated by an overlying laceration or abrasion of the scalp. In patients with severe head injury who fail to improve after an interval of 48 hours, or in patients whose state of consciousness deteriorates, an intracranial clot should be suspected and searched for.

REFERENCES


INTRACRANIAL NEOPLASM LOCALIZED ELECTROENCEPHALOGRAPHICALLY BY THE USE OF A THREE-DIMENSIONAL SCHEME

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With the recent rapid development of interest in the utilizable efficacy of the electroencephalograph as a tool for the neurosurgeon, particularly with reference to the localization of surgical lesions of the brain above the tentorium, we wish to report the following case.

CASE REPORT

F.S. (referred by Dr. Louis D. Gomon) was a 52-year-old white male admitted to the University Hospital on Nov. 29, 1946, with the history of having had headaches progressively increasing in severity and frequency for the 4 months preceding admission. These were occipital in location. He had had a grand mal convulsive seizure approximately 6 months before admission during his sleep and at least one in the interim. The patient’s wife, who acted as informant, had observed no Jacksonian components associated with the fits. During the last 3 to 4 months there had been a gradual diminution of intellectual acuity and memory. This was first noticed by his employer who, since the patient was a key employee in his organization, urged the family to seek the services of a physician. There were no other complaints.

Examination. The patient was so confused and disoriented that it was impossible to obtain
a story from him. There was loss of memory for both remote and immediate recent events. He was disoriented as to time and place. He attempted to cooperate and alternately grinned and appeared apprehensive. There was no aphasia.

Smell was perceived. Optic disc margins were blurred; physiologic cup and lamina cribrosa could not be discerned in either eye. Blind spots were normal. Pupils were round, regular, equal, and reacted to light and in accommodation. Extra-ocular muscle movements were full and fluid in all fields of regard. There were a few fine perioral tremors. There was no dysarthria. Blood pressure was 100/72 and pulse rate 68.

Superficial, deep, and combined sensory modalities were normal. Gait and station were normal. There were no focal pareses or tremors. Tests for cerebellar function were well performed. All deep tendon reflexes were equally hyperactive without clonus. Abdominal reflexes were equally active in all four quadrants. Cremasteric reflexes were present and equal. Plantar stimulation produced flexion bilaterally. There were no meningeal signs.

The routine serologic Kahn test for syphilis was qualitatively and quantitatively negative. Roentgenograms of skull and chest were negative for neoplasm or other disease processes.

An EEG study produced a localizing sign of high voltage, sudden irregular 2 to 3/sec. waves in groups or singly in any 10 to 20 sec. run with superimposed alpha waves (Figs. 1, 2, and 3). The picture to us was so clear-cut on the basis of our experience with this technique that with this evidence we did not recognize a necessity for further localizing diagnostic aids such as pneumography or angiography.

Operation. On Dec. 6, 1946 an osteoplastic flap was turned down just across the midline in the posterior frontal and anterior parietal region on the left. Upon reflection of the bone flap there was seen immediately abnormal thickening and vascularity of the dura. Beneath this abnormal area was a definitely palpable tumor mass which had the typical gross appearance of a meningioma when the dural flap was reflected (Fig. 4). The posterior limb of the flap had to be enlarged with the rongeur in order to expose the posterior extension of the tumor. The tumor did not approach the superior longitudinal sinus or the falk at any point closer than 5 or 6 mm. so that it was possible to remove it without having to ligate the sinuses. After cutting the dura in circuitous fashion about the base it was possible to roll the tumor gently out of its cortical bed in toto without gross damage to or sacrifice of brain substance. The tumor weighed 190 gm. (Fig. 5).

Course. The procedure was well tolerated and without incident. The patient was up in a chair the following morning and exhibited no deficit other than a complete motor aphasia, which gradually improved. He was discharged home on the 14th postoperative day on anti-convulsant therapy.

He returned to the out-patient clinic 2 weeks later with his wound well-healed, stating that he had had an occasional mild headache. He complained of having had occasional Jacksonian twitches of the right side of the mouth and transient numbness of the right hand. There was no aphasia. There were no objective neurological findings. He was advised to continue his anti-convulsant therapy.

He again returned to the out-patient clinic 1 month following discharge from the hospital. There had been no more fits nor had he any subjective complaints such as he had had on his initial return to the out-patient clinic. He was advised to return to work.

A repeat EEG analysis at this time disclosed an overall dominant normal alpha pattern without evidence of any focal abnormality or episodic paroxysmal signs.

Explanation of Fig. 1

A. Six strips were taken simultaneously. With the vertex (23) as the common lead in push-pull recordings this combination of leads shows irregular 2 1/2 to 3/sec. lesion waves in left prefrontal area (1) and immediately rules out the possibility of extension of the lesion posterior to the interaural plane (23--20, 23--19, 23--18, 23--17). Recordings 23--5, and 23--6 are normal. The last 2 are not shown here.

B. The 2nd, 4th and 6th strips immediately lateralize the lesion in the left anterior quad-