EXPERIENCE WITH TOPECTOMY FOR THE RELIEF OF INTRACTABLE PAIN*

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Initiated by Pool in 1946, topectomy in his hands has been a less mutilating and as efficient an operation as bilateral leucotomy in the treatment of many lasting mental disorders. Bilateral topectomy of the region of areas 9, 10, and 46 appears to produce an especially marked effect on the anxiety of patients. This fact, and the reports of some good results obtained by Freeman and Watts and others using bilateral leucotomy in cases of intractable pain, led me to try bilateral topectomy in such conditions. It was hoped that intractable pain could thus be relieved without mental deterioration. The first results were reported in 1948. Those early cases, in which operation was performed in 1947, and more recent ones, are presented here, making a group of 25 patients with intractable pain submitted to bilateral topectomy.

OPERATIVE TECHNIQUE

The details of the operative technique have been described before and will therefore be omitted here. However, there are certain points to which attention may be called. The first is the actual extent of excised cortex. As a rule, we remove a cortical zone starting 5–6 cm. in front of the coronal suture, and 3–4 cm. long, ending 1–2 cm. from the medial part of the orbital roof. Laterally it extends 3 cm. from the medial line (a little more on the right side than on the left). Medially it is between 1–1 1/2 cm. down along the falx. The average weight of our specimens was 10–12 gm. on each side; that is, about half as much as Pool’s removals, which extend definitely deeper (2 cm.) on the medial aspect of the hemisphere. In that respect, it is important to state again that, as a rule, we are not dealing here with mental cases, where 20–25 gm. on each side seem to be the measure of cortical removal necessary. Rightly or wrongly, in our patients with pain a more limited removal and possibly a more specific effect were looked for.

As prefrontal lobe surgery is still partly in the research stage, it is necessary to check the extent of excised cortex by taking postoperative roentgenograms; if care is taken to place Cushing clips on the limits of the cortical resection (without putting any on the dura) a fairly precise evaluation is obtained. This can be very useful when, as happened in 2 cases, recurrence of pain apparently is related to too limited a resection.

In Figs. 1 and 2, we would say that there were excised the rostral half

* Since this paper was received, the follow-up notes have been brought up to date of September 1949.
of area 9, the dorsal two-thirds of area 10, and the medial third of area 46. This calls for an explanation of what is meant here by these area numbers; they are used merely as topographical landmarks and for brevity of language. For instance, instead of saying that one excises a region of prefrontal cortex within such and such distance in cm. from the orbital roof, the Sylvian fissure, the callosal fissure, etc., we find it more convenient to say that one excises "area 10." This is a short term for area 10 as depicted in Brodmann’s classical map, though we do not believe that we excise with precision delicately defined architectonic areas. We are to be blamed in using area numbers in such a loose sense, but we find it a very simple way of describing the operation.

POSTOPERATIVE COMPLICATIONS

Thirty operations were performed on 25 patients, with 2 postoperative deaths: 1 from acute lung edema (carcinoma of lung), and 1 from vascular collapse (thalamic syndrome and high blood pressure in patient aged 65). Indeed, many patients with intractable pain are poor operative risks, and especially in those over 60 with arterial disorders, unilateral lobotomy, as proposed by Scarff, should be tried first, in our opinion.

Neurological complications were rare. In 2 patients, one epileptic attack occurred the night following the operation, without recurrence. For the time being, none of them has epilepsy; none of them takes luminal or dilantin. In 1 case (thalamic syndrome, Case 15), motor aphasia lasted for 2 days. The longest follow-up period has been 23 months.

Sphincteric disturbances (incontinence) were not always met; when they