CONTROLLED TRANSORBITAL LEUKOTOMY

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In view of the large numbers of transorbital leukotomies being performed it is apparent that this operation is gaining in recognition, and may well account for approximately one-third of the lobotomies performed, according to Freeman and Watts. In his appraisal of this procedure, which he has used in 300 cases, Moore was of the opinion that it possesses a great advantage over other methods of lobotomy in that there are no untoward psychological effects, there is an ease of performance, the hospitalization period is short and nursing care is minimal, the morbidity is insignificant, the mortality rate is low (1.8 per cent), and the results are as favorable as those obtained with other more extensive operations. Moore urged a greater utilization of this operation in suitable cases. Wilson and Pittman, after their study of 200 cases, recommended transorbital lobotomy for all chronically disturbed patients when less strenuous forms of treatment have failed after 1 year's trial. It is apparent also from an abundant literature that prefrontal lobotomy has certain ameliorating tendencies in the care of the patient with intractable severe pain, whether or not the procedure is done through a trephine in one of various positions, or through the transorbital route.

In discussing transorbital lobotomy Williams and Freeman felt that the morbidity and mortality statistics of this operation are encouraging. Fifteen brains were studied up to 1 year after such an operation. These authors concluded that from a pathological standpoint, the operation is a clean-cut, selective procedure for severing the thalamofrontal radiations. Fulton, on the other hand, believed that the operation of lobotomy removes large numbers of visceral pain projections from the sphere of consciousness, which accounts for the patient's change in attitude towards his pain. Balakrishna Rao claimed that lobotomy is more effective in patients with marked psychic pain, which favors the opinion of most writers that the benefits of psychosurgery result largely from relief of the anxiety and fear of the future and from the euphoria produced. Fulton believed that radical lobotomy should be abandoned in favor of a more restricted lesion. Several more limited procedures have been recorded in the literature. Grantham, for example, stated that good results were obtained in a series of patients with severe pain when the pathways in the lower mesial quadrants were interrupted. It appears that the present trend is toward a more selective or restricted operation.

This discussion does not concern itself with the pros or cons of prefrontal lobotomy either in psychosurgery or the pain problem. Neither is it a discus-

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sion claiming greater effectiveness in the solution of either of these problems by surgical methods. Rather, it is concerned with the presentation of another method of attacking the same problem with more regard for the patient's safety, yet achieving the desired clinical result. The leukotomy is converted to a more precisely controlled operation which leaves a set of data in each case available for future study and analysis. An attempt has been made to make this particular operation less of a blind procedure than it has been heretofore. A specially designed transorbital leukotome, under x-ray control in its positioning and manipulation, was used. This leukotome (Fig. 1) consists of a hollow steel rod with a blunted tip, having within its lumen a steel wire capable of being extruded through a slot to expand into a cutting loop of a predetermined variable size, and controllable at the gripping end of the tool. The tip of the leukotome is deliberately left blunt so that, while capable of penetrating the orbital plate, it would tend to push aside any vessel encountered in its course without lacerating it. A lateral cutting of the white substance is done with a thin wire loop which is easily deflected by any vessel encountered. This inner cutting wire is replaceable. Should a vessel be inadvertently encountered and ruptured, the operator would be immediately apprised of this fact by the flow of blood down the lumen of the instrument. This has not been encountered to date. The lateral extension of the expanding loop is measurable in centimeters upon the handle of the instrument.

**PROCEDURE**

This operation is considered only after x-ray study of the head and orbit has been made to eliminate those factors that could be complications in the use of the transorbital approach. As summarized by Fiamberti they are: (1) aberrant ethmoid cells with infection, (2) malformations or thickening of the orbital plate, (3) osteomas of the orbital plate, and (4) intraorbital tumors. Having determined that none of these situations exists, the patient is prepared for surgery in the usual manner, though obviously no special head preparation is necessary. The operation is carried out in the operating room if a