PREFRONTAL LEUKOTOMY: A CLINICAL SURVEY OF 100 CASES GIVEN AN ACTIVE RETRAINING PROGRAM IN A MENTAL HOSPITAL*

BY MAURICE KLOTZ, M. D., WALLACE P. RITCHIE, M. D., AND BURTRUM C. SCIELE, M. D.

INTRODUCTION

The purpose of this paper is to add data to the mass of information now being accumulated in the study of prefrontal leukotomy. Particular reference will be made to the function of a special leukotomy program as an aid in the rehabilitation of the patient. Although there have been criticisms to the contrary, there is increasing evidence that in carefully selected cases, bilateral prefrontal leukotomy is a useful adjunct in the active treatment of chronic mental illness. Since this is a major operation with irreversible effects, the writers believe that much thought and consideration should be given before the patient is recommended for this procedure. There have been many good reviews of psychosurgery and a comprehensive discussion and bibliography of this subject was made recently by Greenblatt and Myerson. It is not believed that another review is indicated at this time.

SURVEY

General. This study covers 100 consecutive cases subjected to bilateral prefrontal leukotomy from March 1946 until January 1950, at the Veterans Administration Hospital, St. Cloud, Minn. These patients were all men between the ages of 21 and 61, with a mean age of 38.1 years. The duration of illness varied between two and 37 years, with a mean of 10.62 years. The duration of hospitalization varied between two and 30 years with a mean of 7.79 years; 89 per cent of the patients were diagnosed as schizophrenic. The postoperative course of the patients was followed for a period of two months to three years. Fifty-nine patients were lobotomized in the first three years of the study and the remaining 41 in the fourth year.

*Reviewed in the Veterans Administration and published with the approval of the chief medical director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.
**Criteria.** Patients considered suitable for the operation were referred by their doctor to the leukotomy committee, which consisted of the consultant neuropsychiatrist, the chief of the acute intensive treatment service, and the clinical psychologist. They were also examined by the consultant neurosurgeon. These patients were reviewed in reference to pre-psychotic history, nature and course of illness, laboratory studies and previous treatment. Patients were considered favorable when they showed a high proportion of affective components, retained some degree of personality integration, displayed tension and anxiety and had shown favorable, even though temporary, response to shock therapy. The discomfort expressed or displayed by the patient was considered an important factor. Factors against consideration of the procedure included severe regression and hebephrenic manifestations. Approximately 33 per cent of the patients in the series were subjected to the procedure, even though they lacked many of the favorable indications. Patients in the chronic, actively-disturbed group were severe problems because of their destructiveness and aggressive manifestations toward themselves and others. The approval for the procedure was given to enable these patients to become more comfortable and permit them to take advantage of the therapeutic efforts to which they were previously inaccessible. The details of the criteria have been outlined in Veterans Administration Bulletin TB10-46.²

**Technic.** The technic of operation in all cases except the first four was approximately the same as described by Lyerly³ and Poppen.⁴ Buttons, three-fourths of an inch in diameter, were removed in the line of the coronal suture about three and one-half centimeters lateral to the midline, and the dura was opened. Cortical vessels were disturbed as little as possible. The position of the sphenoid ridge was determined by cannula, and the incisions were carried from the line of the coronal suture to that point, in patients receiving total prefrontal leukotomies. The extent of the leukotomy was classified in relation to this plane. The incision was performed under direct vision by means of a small suction tip. Tantalum clips were inserted at the base of each incision to serve as markers. Each centimeter of deviation anterior to this plane reduced the extent of the operation by 25 per cent.

**Postleukotomy Retraining Program.** Postoperatively, the patient was treated on the infirmary ward from five to seven days.