

as a screening instrument for anxiety and, therefore, is not recommended as a diagnostic device. The scale was acceptable to the patients and the majority had no difficulty in completing it.

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Outcome in Unipolar Affective Disorder after Stereotactic Tractotomy

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An evaluation of 15 patients treated by subcaudate stereotactic tractotomy (SST) for treatment-resistant unipolar affective disorder was made for frequency and severity of recurrence of illness. One-third had died by the time of assessment, but none by suicide. Two-thirds of the sample experienced a reduction in the severity of depressive episodes after the operation; only one-third reported a reduction in frequency of episodes.

The operation of subcaudate stereotactic tractotomy (SST) was developed by Geoffrey Knight in 1965 (Knight, 1965). It is considered appropriate for a minority of patients with severe obsessional disorders, unipolar depression or anxiety states, which are unresponsive to other therapies (Bridges *et al*, 1981). Recent evidence suggests that it may also

be helpful in patients with bipolar affective disorder (Lovett & Shaw 1987; Poyton *et al*, 1988).

The original studies on outcome for those patients with severe depression, chronic or recurrent, who underwent stereotactic tractotomy were done in the early 1970s (Strom Olsen & Carlisle, 1971; Bridges *et al*, 1973). A later investigation by Goktepe *et al*

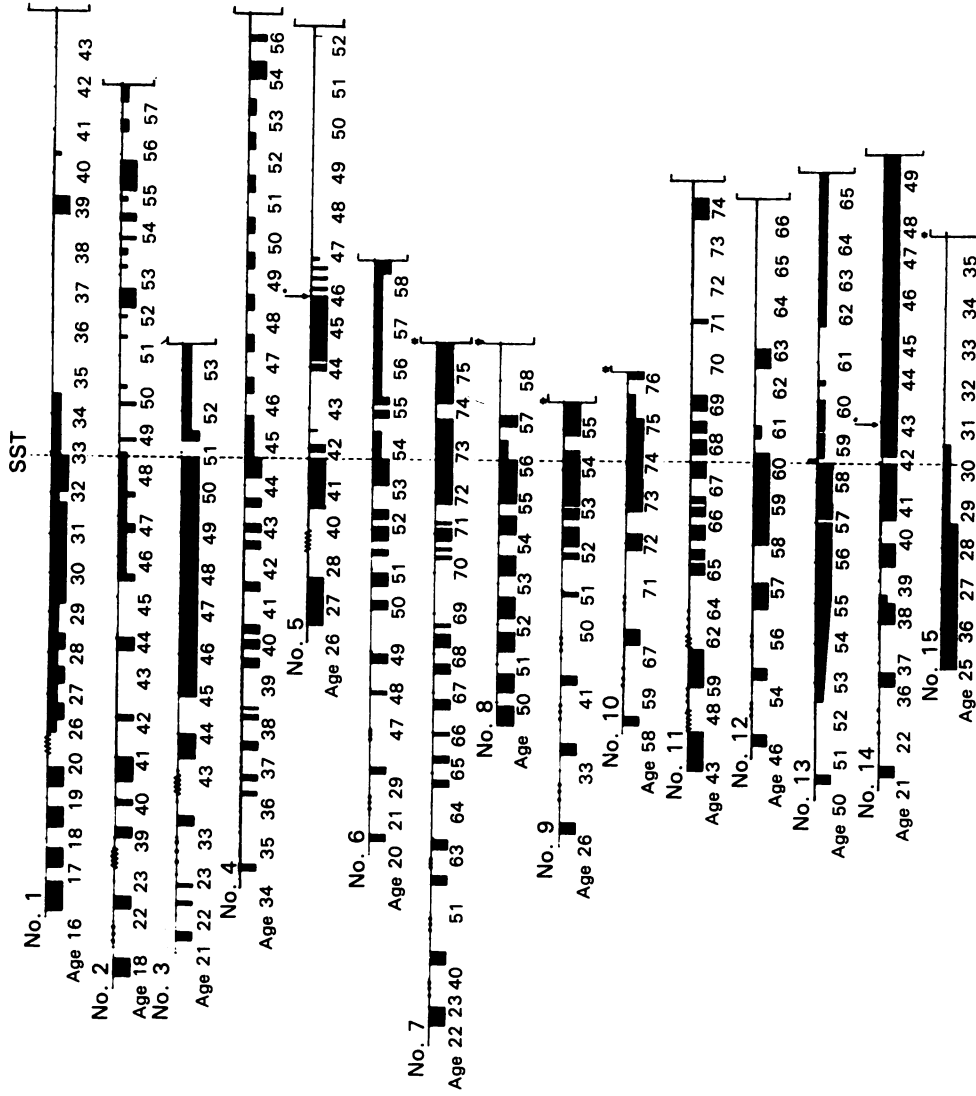


FIG. 1. The time axis is in years and represents the age of the patient. The dotted vertical line marks the point when subcaudate stereotactic tractotomy was performed. An arrow with a star marks an extension. An asterisk marks the time of death. Severe and moderate episodes of illnesses are marked by downward entries; the degree is indicated by the depth of the marker. A squiggly line represents a time collapse when further but poorly documented depressive illness occurred. Dots represent a time collapse which is a known illness-free period.

(1975) reported that almost 60% of those patients suffering from depression had recovered completely or retained only mild symptoms by the time of review, which was between 2½ and 4½ years after surgery. A recent survey of outcome following operation by stereotactic tractotomy or non-stereotactic techniques is reported by Hussain *et al* (1988).

We report on a further 15 cases of patients suffering from unipolar illness who were referred from Whitchurch Hospital, Cardiff, to the Brook Hospital, London, where they underwent SST. The patients had long histories of depressive disturbances in mood which were either recurrent or continuous, and resistant to all treatments available at the time when they were referred. Patients were observed for a mean length of 69 months following the operation (range 16 months to over 10 years), but five had died by the time of assessment. Information on the course of illness was determined by examination of case notes. Interviews, or correspondence, with patients and/or close informants helped to clarify this information and to develop a subjective idea about the outcome of the patients in terms of social functioning and personality change.

Figure 1 shows the pattern of illness for all 15 cases before and after surgery. Entries below the axis represent depressive episodes. We describe one case in detail, chosen for its representative severity of treatment – resistance illness before surgery and moderate outcome following surgery.

Case report

Case one (Figure 1)

The patient came from a high-achieving family and has considerable intelligence. Her mother had a history of depressive illness responsive to monoamine oxidase inhibitors.

The patient's first depressive illness occurred when she was 16 years old and followed a possible mumps encephalitis. There were then three further episodes, each lasting about six months. Although the last of these occurred while she was at university, she completed her degree. During the following six years, she was well enough to complete a higher degree and gain a professional qualification. She worked in her profession for one year before becoming ill again. For the next six years she was continuously ill, with some fluctuation in severity. During some of this time she was employed; however, the jobs were not commensurate with her qualifications. Throughout this time and from adolescence, she suffered from various physical illnesses which included spastic colon, ulcerative colitis, a recurrence of mumps, and glandular fever.

Treatments were numerous and varied during the five years before she underwent stereotactic surgery. When she

was 27 she had psychotherapy for one year. She had been receiving nortriptyline for many months, before presenting at Whitchurch Hospital, where she was initially treated with fluvoxol and ECT. She was unresponsive to these, and treatment was then attempted with tranylcypromine (40 mg) and lithium. She recovered enough to return to a busy job but rapidly deteriorated. Subsequent treatments included sleep deprivation, tryptophan and prothiaden before she underwent stereotactic surgery when she was 32 years old.

After surgery, her mood improved, but she did not become euthymic until she was prescribed a combination of trimipramine and lithium. Her mood was sustained for four years until treatment with lithium was stopped because of the fear of renal complications. She relapsed into a severe depressive episode which was responsive to ECT. Treatment with lithium was restarted, and for the last two years she has been well, except for one minor episode requiring no change in treatment. She continues to take lithium and a tricyclic antidepressant.

Throughout the last eight years she has had considerable orthopaedic and gynaecological problems. When she was 36 years old she registered as disabled because of back problems, and at the age of 41 she had a hysterectomy and a repair operation for incontinence. Despite these difficulties she has had only the two episodes of depression described above. Although currently unemployed she has worked intermittently over the last eight years. However, she is dissatisfied with her employment record and the fact that she has not managed to live independently of her parents. She is unmarried and has never had a partner. She says that, since surgery, she has become more garrulous and that this has been commented on by friends.

This case is typical in that the treatments given were similar to those received by other patients in the series. All had at least three different antidepressants before SST, which included a monoamine oxidase inhibitor, and many were at some point receiving triple therapy (lithium, monoamine reuptake inhibitor and tryptophan). Following surgery, most have continued on an antidepressant, and in some cases lithium or carbamazepine has been added. The less successful cases have continued to receive a range of treatments similar to that given before SST.

Discussion

This study obviously has a number of limitations. Data collection is retrospective and relies in part on case notes, and the sample size is small. There are no objective baseline data on level of social functioning before SST, and there is no control group. Controversy exists on the natural course of affective disorder (Angst, 1981; Bland, 1985), which means that statements about the progress of each patient's illness pattern with time must be tentative, and changes could be due to chance variations in vulnerability to illness.

With these reservations in mind, the following tentative conclusions may be drawn about the course of unipolar affective disorder following SST:

- (a) Two-thirds of the patients experienced some reduction in severity of episodes of illness.
- (b) One-third of the patients experienced a reduction in frequency of episodes of illness, and one experienced a reduction in severity as well.
- (c) For some patients (cases 5, 10, 11 and 15) drugs which were ineffective before surgery have become effective following surgery. One user (case 15) required no medication at all following surgery, and did well.
- (d) One-third of the sample had died by the time of the follow-up (ages 75, 58, 55, 76, 35), none, as far as can be ascertained, by suicide. Four of the patients died because of respiratory or cardiovascular failures.

Thus, although there appears to be attenuation of mood disorder following SST, this improvement is not as impressive as that seen in a series of bipolar patients, all of whom reported a reduction in both severity and frequency of episodes of illness (Lovett & Shaw, 1987). In that study the data suggested that hypomanic episodes of illness were more responsive to SST than depressive episodes, in that they either stopped or occurred in a very much milder form. It could be that depressive episodes in general, but those in unipolar depressive affective disorder in particular, are less sensitive to SST. Another possible explanation for this apparent difference in response to SST could be that unipolar patients underwent the operation at a later stage of illness than did bipolar patients, and consequently are a more treatment-resistant population because they have experienced longer periods of illness and secondary psychosocial deterioration. However, the mean number of years from first episode of illness to SST was approximately 19 years in both groups.

There is little information on whether bipolar and unipolar patients differ in their susceptibility to psychosocial damage inflicted by such prolonged periods of mental illness. If unipolar patients were more vulnerable than bipolar patients to personality deterioration or to the activation of pre-existing personality traits (Kraines, 1957), this could lead to more chronicity of symptoms, dependency and disinclination to relinquish the role of patient. In fact, about half the patients in this series were not functioning well socially and one-third may have suffered deterioration in personality; in some, pre-existing personality traits had caused problems in social adjustment. We base this assessment on careful examination of the case notes and direct reports from

patients and close informants. However, assessment of personality in the presence of continuing illness is extremely difficult, and conclusions about this area have to be tentative.

A further explanation for the less-good outcome in this group of patients could be that some suffered from developing and/or undiagnosed pre-existing organic brain disease which altered their response to SST, and the presence of possible brain damage was not considered a contraindication to operation. In the bipolar series, one patient whose course of illness was particularly poor had had embolic cerebral damage before and after the operation, and had an indifferent result. The evidence in these unipolar patients is inconclusive. A patient (case 10) who died of a subarachnoid haemorrhage experienced a course of illness which was unaffected by SST; a CAT scan performed prior to SST showed cortical atrophy. However, a patient (case 8) who was diagnosed as having an Alzheimer's dementia one year after SST experienced a considerable improvement in mood. The prognostic value of diagnosing organic brain disease in assessing outcome following SST has yet to be clarified and should be an area for future study with the more sensitive techniques now available.

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