Neurosurgery for mental disorder in the UK

Chris Freeman

Neurosurgery is currently carried out at seven separate centres in the UK. Each centre carries out a very small number of operations annually. Centres use different operations for the same conditions and no standardised criteria are used for assessment, suitability, severity or follow-up. A recent report from Scotland (Clinical Resource and Audit Group, 1996) has addressed some of these issues. Its recommendations are clear and sensible and many of them should be adopted UK-wide.

What is in a name?

For the Clinical Resource and Audit Group (CRAG) document we decided on the term 'neurosurgery for mental disorder' rather than 'psychosurgery'. There were a number of reasons for this:

(a) it is in line with the terms used in other countries such as Sweden and the USA
(b) the term 'psychosurgery' has become firmly linked with older, freehand operations which had little to do with modern neurosurgical techniques
(c) the term 'neurosurgery' emphasises that the surgical technique is the same as that used for other conditions such as Parkinson's disease and pain
(d) the term 'neurosurgery for mental disorder' emphasises that this is a treatment for specific conditions such as treatment-resistant major depressive disorder and obsessive-compulsive disorder and is not a treatment for behaviour disturbance, aggression or anti-social traits.

Which operation for which condition?

Several different operations are carried out in the UK but there is reasonable consistency in terms of clinical disorders treated. A majority of patients have severe treatment-resistant depression and a minority severe treatment-resistant obsessive-compulsive disorder. In Sweden, the main operation is capsulotomy and neurosurgery is almost exclusively used for obsessive-compulsive disorder (OCD) and severe non-OCD anxiety disorders. In the US, the main operation is cingulotomy and the main indication is OCD and OCD-related disorders (see Table 1). It is of interest that outside the UK, severe anxiety disorders and OCD are the main clinical indications, whereas we tend to treat mainly affective disorder.

The evidence for efficacy comes from open series, case reports and powerful clinical opinion. There are no randomised controlled trials (although one is currently underway in the US using cingulotomy for OCD). There are no good case-controlled series where patients matched for severity, chronicity and previous treatment who do not have neurosurgery, are compared with those that do. Reports of 30, 40 or 60% improvement post-surgery are extremely difficult to evaluate without such case-controlled studies. Nevertheless, I have certainly seen individual cases where improvement post-surgery has been dramatic and sustained. But then I have also seen cases of severe, treatment-resistant affective

Table 1. Summary of procedures in neurosurgery for mental disorder

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Target Site</th>
<th>Practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stereotactic subcaudate tractotomy</td>
<td>Orbitomedial quadrants of the front lobes</td>
<td>Knight, Bridges &amp; Bartlett: London (Brook)</td>
</tr>
<tr>
<td>Stereotactic anterior capsulotomy</td>
<td>Anterior capsular radiations</td>
<td>Mindus &amp; Meyerson: Sweden Fenton &amp; Varmia: Dundee and Cardiff</td>
</tr>
<tr>
<td>Stereotactic limbic leucotomy</td>
<td>Combination of orbitomedial and cingulate lesions</td>
<td>Kelly &amp; Marsh: London (Atkinson Morley)</td>
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<tr>
<td>Stereotactic anterior cingulotomy</td>
<td>Cingulate tracts</td>
<td>Ballentine Rasmussen, USA</td>
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</tbody>
</table>

Psychiatric Bulletin (1997), 21, 67–69
disorder where remission has occurred without operation. My personal view is that the best
evidence for efficacy concerns OCD and severe anxiety disorders, if only because these disorders,
when severe, tend to run a very chronic and stable course and therefore it is easier to attribute
post-surgical improvement to surgery rather than to spontaneous remission. The evidence from
Mindus’s group (1995) indicates that outcome for non-OCD severe anxiety is as good and
perhaps slightly better than for OCD itself.

Too many centres doing too few operations
It simply does not make sense to have seven
different centres carrying out neurosurgery for
mental disorder, each performing tiny numbers of
operations each year (see Table 2). In Scotland,
we decided to have only one centre (Dundee). It
surely makes sense to centralise operations in
England and Wales on one or perhaps two
centres. The paper in this journal (Snaith, 1997)
shows what can be achieved with a good, regional
service manned by a consistent clinical team.
Nevertheless, the rate of operations carried out is
less than one per year over the period described
and this cannot be seen as best practice in terms
of maintaining expertise, consistent assessment
and follow-up. Unless there is going to be a
marked increase in the number of operations
carried out, there is no need for regional centres.
We must be aiming for a national service.

Standardisation of pre- and post-operative
assessment
At present this is completely lacking although the
Mental Health Act Commission has at least tried
to ensure that, pre-operatively, the same Com-
missioner sees all patients in England and Wales. There should be clear nationally agreed guide-
lines for the following areas:

(a) the nature and severity of psychiatric
disorders considered suitable for neuro-
surgery
(b) the range and completeness of previous
treatment prior to neurosurgery
(c) a psychometric test battery for cognitive
testing pre- and post-surgery and at follow-

Examples of these are given in the CRAG (1996)
document. These do not necessarily have to be
strict clinical algorithms with steps that all
patients must pass through. Many patients
cannot tolerate all the various steps in a drug
treatment strategy for either treatment-resistant
depression or obsessive-compulsive disorder.
Some patients are unable to engage in meaningful
cognitive-behavioural psychotherapy but at the very least, the protocol provides a set of
steps which should be attempted before neuro-
surgery is considered. In my somewhat limited
experience of assessing OCD patients being
considered for surgery, none has come anywhere
close to having had a complete range of other anti-
OCD treatments. Such assessments pre- and
post-operatively and at a minimum of six months
and one year follow-up, should be built into the
price of the surgery. In the year when no operations were carried out at the Brook Hospital
(now the Geoffrey Knight National Unit for
Affective Disorders) because of the non-availabil-
ity of Yttrium rods, active, high dose antidepress-
sant drug treatment produced remission in
several patients waiting for surgery (Bridges,
evidence to CRAG Committee).

Monitoring of the use of neurosurgery of mental
disorder
In Scotland we have recommended that the
neurosurgery centre should provide an annual
report and we have tabulated the core content of
such a report. We have also recommended that
there should be a Standing Advisory Committee
with both lay and clinical membership. The
Standing Advisory Committee would have the
following functions:

(a) to receive annual reports from the Scottish
centre as to the neurosurgery for mental
disorder operations performed there
(b) to ensure the outcomes of such operations
are properly and independently evaluated
(c) to approve other mental disorders for
which neurosurgery for mental disorder
would be available as a treatment
(d) to advise and assist the Scottish centre in
the development of the assessment and
management protocols
(e) to provide independent advice to purcha-
sers
(f) to liaise with other bodies having similar
functions in other countries, and
(g) to maintain an overview of neurosurgery
for mental disorder and the Scottish centre
generally.

Such Advisory Committees exist in other coun-
tries. For example, there is a joint one between
The Netherlands and Belgium. In some centres
these committees are involved in the assessment
of patients. The CRAG report is quite clear that
the Advisory Committee would not be involved in
any stage in either the treatment or certification
of an individual patient as long as the patient’s
diagnosis and/or treatment fell within the para-
eters set out in the approved treatment proto-
cols. Nor would the Advisory Committee be
involved in audit which it saw as an essentially
clinical matter. As a profession, we need to
consider whether such a monitoring committee
Table 2. Total number of NMD operations carried out in the UK (1979–95)

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<td>% of operations performed by Brook</td>
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Sources: Bridges et al (1994); Mental Health Act Commission; Professor G. W. Fenton, Ninewells Hospital, Dundee; Mr N. Kitchen, Atkinson Morley’s Hospital.

1. The Brook Hospital, now the Geoffrey Knight National Unit for Affective Disorders did not perform any operations in 1995 due to relocation.

should exist only in Scotland, separately in Scotland, England and Wales, or whether a single national Standing Advisory Committee which received reports from each of the centres might be a more sensible arrangement.

**Conclusions**

As psychiatrists, we have been neglectful of the standards and monitoring of neurosurgery for mental disorder. Although the rate of operation has fallen, it does still continue to be practised and there is no doubt that for individual patients it can be dramatically beneficial. Much of the hard work producing recommendations concerning standards, monitoring and regulations has already been done by the Scottish Office CRAG report. A small group is currently meeting within the College and we hope to produce recommendations for the College by Easter of 1997.

**References**


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