

Neurosurgery for mental disorder in the UK

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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

Stereotactic subcaudate tractotomy	
Target site:	Orbitomedial quadrants of the front lobes
Practitioners:	Knight, Bridges & Bartlett: London (Brook)
Stereotactic anterior capsulotomy	
Target site:	Anterior capsular radiations
Practitioners:	Mindus & Meyerson: Sweden Fenton & Varma: Dundee and Cardiff
Stereotactic limbic leucotomy	
Target site:	Combination of orbitomedial and cingulate lesions
Practitioners:	Kelly & Marsh: London (Atkinson Morley)
Stereotactic anterior cingulotomy	
Target site:	Cingulate tracts
Practitioners:	Ballentine Rasmussen, USA

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 Commissioner sees all patients in England and Wales. There should be clear nationally agreed guidelines for the following areas:

- (a) the nature and severity of psychiatric disorders considered suitable for neurosurgery
- (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-up

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 neurosurgery is considered. In my somewhat limited experience of assessing OCD patients being considered for surgery, none has come anywhere near 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-availability of Yttrium rods, active, high dose antidepressant 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 treatment protocols
- (e) to provide independent advice to purchasers
- (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 countries. 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 parameters set out in the approved treatment protocols. 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)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total
Brook Hospital, London	47	50	42	35	28	7	16	11	12	20	18	20	15	22	13	11	0 ¹	367
Atkinson Morley's, London	-	-	-	-	-	-	5	5	4	3	5	7	0	1	2	3	1	36
Pinderfields, Wakefield/ Leeds	-	-	-	-	-	-	1	1	0	1	0	1	1	2	1	0	1	9
Birmingham	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	0	1
Bristol	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	0	1
Dundee	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	4	3	14
Cardiff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	7
No specified	23	12	16	3	9	3	-	-	-	-	-	-	-	-	-	-	-	66
Total	70	62	58	38	37	10	22	17	16	26	23	28	16	26	24	20	8	501
% of operations performed by Brook	67	81	72	92	76	70	73	65	75	77	78	71	94	85	54	55	0 ¹	73

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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