avoid bias, ratings were done by psychiatrists not involved in patient selection and postoperative treatment. Seventeen of 23 patients alive at long-term follow-up were seen in person and relatives were interviewed. The reduction in anxiety ratings was significant both as 1-year and long-term follow-up. Seven patients were, however, rated as experiencing significant adverse events, the most prominent symptoms being apathy and dysexecutive behaviour; also neuropsychological performance was significantly worse in these patients. I therefore agree with Matthews & Eljamel that we must continue to evaluate the efficacy and safety of NMD.

Declaration of interest

C.R. has participated in numerous educational events sponsored by pharmaceutical companies and has been a consultant for Pfizer.

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Authors' reply: Rück makes reference to a series of studies reporting personality change following anterior capsulotomy, including his recent review of 26 patients undergoing thermal capsulotomy for anxiety (Rück *et al*, 2003). He raises interesting questions about the prevalence of personality change following certain (if not all) neurosurgical procedures for mental disorder, and such questions remain, we believe, essentially unaddressed by previous research. Rück's rate of apparent personality change following anterior capsulotomy is comparatively high at approximately 30% of patients. This rate is higher than those rates reported in earlier literature, which suggest rates of up to 10% for stereotactic subcaudate tractotomy (Ström-Olsen & Carlisle, 1971; Goktepe *et al*, 1975) and 2% for stereotactic cingulotomy (Dougherty *et al*, 2002). However, 24% of patients undergoing limbic leucotomy had transient apathy which resolved fully (Montoya *et al*, 2002).

In addition to the lack of uniformity of measurement across studies, another key difference may lie in the fact that many of the larger studies included patients with a variety of diagnoses, including depressive disorder, obsessive–compulsive disorder (OCD) and anxiety disorder. In fact, non-OCD anxiety disorders made up a small percentage of most of the studies cited above, whereas Rück's study sample comprised entirely patients diagnosed with non-OCD anxiety disorder.

The lesions of anterior capsulotomy disrupt the continuity of the fronto-striatal–pallidal–thalamic circuits which are believed to be dysfunctional in OCD (Modell *et al*, 1989). Important connections between the orbitofrontal cortex, anterior cingulate regions and the thalamus also lie in the anterior part of the internal capsule and are thought to play an important role in the pathogenesis of major depressive disorder (Tekin & Cummings, 2002).

Most psychiatrists, neurologists and neurosurgeons would probably predict high rates of serious psychopathology – including personality changes – if such lesions were made within 'healthy brains'. If the existing literature can be considered reliable, including the report of Rück and colleagues, it is quite remarkable that the reported rates of significant frontal psychopathology are so infrequent. Hence, three possibilities (at least) must be considered:

(a) that neuropsychological and personality screening for frontal impairment has been grossly inadequate in almost all studies;

(b) that the deleterious effects of frontal surgery on patients with chronic intractable affective disorders may be minimised because the target brain structures are already dysfunctional, perhaps with important frontal functions being undertaken by non-frontal structures (such plasticity of mammalian brain function is plausible, see e.g. Kolb & Gibb, 1993);

(c) different forms of psychiatric disorder may be associated with different risks of adverse consequences following NMD; for example, thermal capsulotomy for non-OCD anxiety disorders may present a higher risk of frontal psychopathology than capsulotomy for OCD or depression.

In reality, the true picture may represent a combination of influences from these three factors. What is clear is that all NMD must be accompanied by detailed prospective audit with comprehensive evaluation of 'frontal' neuropsychology and personality functioning.

Declaration of interest

K.M. has received payment for lectures on the management of depression from various pharmaceutical companies.

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Neuroscience and psychodynamics

I was taken by surprise to read a positive article concerning psychoanalysis. In response I would like to make some comments on facts and their interpretation, the individual and his or her context and the impossible relationship between mind and brain.

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