ACTA Scientific Neurology (ISSN: 2582-1121)

Volume 7 Issue 5 May 2024

Editorial

Ethical Considerations in Psychiatric Neurosurgery: Changing Perspectives

Bhakti Murkey*

Assistant Professor, Department of Psychiatry, Pacific Medical College and Hospital, Udaipur, India

***Corresponding Author:** Bhakti Murkey, Assistant Professor, Department of Psychiatry, Pacific Medical College and Hospital, Udaipur, India.

DOI: 10.31080/ASNE.2024.07.0735

Received: March 26, 2024

Published: April 26, 2024

Abstract

From frontal lobotomy to stereotactic functional neurosurgical procedures targeting specific neuroanatomical sites, psychosurgery has transitioned drastically from indiscriminate application on severely ill neuro-psychiatric patients, to strictly controlled, well researched and more acceptable means of application on treatment resistant psychiatric disorders. The role of informed consent has been particularly emphasized in the current advocation of psychosurgical interventions for patients suffering from treatment resistant neuropsychiatric manifestations.

Keywords: Psychosurgery, DBS, Ethics

Article

From times relating to antiquity, psychosurgical procedures have evolved from much feared frontal lobotomy of nineteenth century to the promising advents of functional stereotactic procedures such as capsulotomy, sub-caudate tractotomy, anterior cingulotomy and so on. There has also been a rise in non-invasive therapeutic approaches such as transcranial magnetic stimulation, vagal nerve stimulation, gene and stem cell therapies, and the well-popularised, minimally invasive deep brain stimulation (DBS) [1].

Conceptualised as an invasive treatment for mental disorders and coined by Portuguese neurologist Moniz in 1936, 'psychosurgery' gained fame for promising potential benefits in treating schizophrenia, anxiety, and depression by merely severing the brain's white matter tracts manually or chemically (injecting alcohol locally). However, these procedures soon experienced mixed feedback across the world. While notable improvements were seen in the positive and disorganised symptoms of schizophrenia, there was some symptom relapse over longitudinal assessments. Lack of evidence-based literature and a reliable framework for case eligibility, along with relative contraindications and long-term hazards slowed the advent of this procedure in clinical practices.

It was in 1990s that the interest in stereotactic surgeries was renewed, when DBS received attention in management of treatment resistant obsessive compulsive disorder (OCD). Vagal nerve stimulation (VNS) was also brought to notice as an adjunctive option in managing resistant depression. In the meantime, use of psychosurgery remained restricted due to other pragmatic challenges such as financial constraints and/ or lack of professional liaising between neurosurgeons and psychiatrists. The moral dilemma underlying timely and appropriate use of psychosurgeries continues to be a major contributor to its half-hearted use in psychiatric patients.

Effectiveness of psychosurgery in managing violent and impulsive behaviours in psychiatric patients as been well

highlighted. However, whether these patients have the mental capacity to consent to these procedures is unclear. It appears that most countries have considered the role of psychiatric neurosurgery in patients who have not responded to adequate trials of medication, psychotherapy and/or electroconvulsive therapy. However, adopting relatively crude psychosurgical procedures in an overenthusiastic fashion might have caused patients to suffer irreversible side effects like unwanted personality alterations or vegetative mode of living. Such unfortunate occurrences have also been subject to political influences behind the antipsychiatry movement of 1970s, which led to an overall decline in the social acceptance of psychosurgeries. Despite vast advances in functional imaging, surgical precision, and safety of these procedures established in recent times, patients hesitate to undergo psychosurgical interventions. This in turn hinders their optimal living and interferes with the opportunity for reduced burden of care or life-long health costs [2].

The roots of psychosurgery are based in the critical acclaim received by frontal lobotomy. But the emerging era asserts a hypothesis-driven, outcome-based, and well researched controlled experimentation of psychiatric neurosurgery, while addressing expectations of patients and their caregivers. The ethical disappointments of lobotomy can today be remedied by use of stringent bio-medical conduct that appreciates the significance of informed consent and human rights [3]. Studies indicate that reservations based on historical findings, fears about personality changes, and lack of convincing scientific evidence are the main concerns against psychiatric neurosurgery today. Hence, multicentric randomized controlled trials need to be held in future, in order to gather robust data on psychiatric neurosurgery. The potential changes in personality are rather of qualitative concern, wherein the intended nature of change remains the target of intervention. Any change in personality which is involuntary, coerced, harmful to self/others, or results in a change that diminishes the patient's abilities or autonomy is unwelcome [4].

The World Society for Stereotactic and Functional Neurosurgery (WSSFN) in 2014, outlined standard guidelines for appropriate therapeutic used of psychiatric DBS and recruitment of eligible patients, much similar to pre-existing guidelines under National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research. They have together recommended that a committee be formed, comprising of trained stereotactic and functional neurosurgeon, psychiatrist, neurologist, and neuropsychologist, in order to approve of the processes for selecting patients, conducting preoperative evaluations, and detailing actual neurosurgical operations. They have also outlined the need for informed consent, with an ardent emphasis on regarding each patient's decision-making capacity, and arranging for nominated representatives for them in case of diminished mental capacity. In order to protect vulnerable patients from possible coercion, the committees recommended that the psychiatric DBS procedures be regulated under state law, along with establishment of a national database for psychiatric DBS trials, and ensuring proper care by a trained physician before providing acceptance to clinical trial protocol [5].

In 1973, Gaylin made a compelling statement at a symposium in Columbia University School of Law, 'If there is a difference between implanting an electrode and implanting an idea, it will require more elegant intellectual attention than it has yet received.' Ahead of his times, he rightly asserted that technological advances such as artificial intelligence and robotics of today's times, require highly intellectual engagement from our sides, albeit refraining from unwarranted disdain and/ or uncritical acclaim towards them. Receiving health care advances like gamma knife or focused ultrasound technologies in psychosurgery with an open mind, and not viewing them as impending perils threatening our societal well-being, will be helpful. It is the responsibility of clinicians and policy makers to communicate wisely about the risks and benefits of the various psychosurgical treatment modalities and facilitate conscious decision-making by the patient in question [6].

A psychiatric neurosurgery of OCD or depression is more readily and ethically acceptable than the one aimed explicitly at altering maladaptive behaviour traits [7]. With parallel availability nootropics, cognitive enhancers and novel antipsychotic medications, the role of psychiatric neurosurgery to alter undesirable personality traits, or possibly enhance desirable ones is an ongoing ethical dilemma. While there is growing patient acceptability for these modalities, most candidates are looking to correct what they perceive as defects in their personalities, rather than change anything they find normal in themselves. The current trend in psychosurgery has decent degree of evidence on their role in managing neurological disorders (Parkinson's or Huntington's

disease) and a few psychiatric conditions. Their role in addressing maladaptive personality traits (polysubstance use, binge eating) or intense negative emotions (anger, greed, melancholy), and in realistically enhancing positive emotions (happiness, optimism) or optimising human intelligence (creativity, memory), has not been studied in depth. Taking patient attitudes and cultural aspects into consideration will perhaps help in balancing the act of right versus wrong from an ethical point of view. In the quest for scientific progress, we as healthcare providers must ensure that in the spirit of our enquiry, we do not outrun the societal pace of ethical approval [8].

Bibliography

1. Mashour G A., *et al*. "Psychosurgery: past, present, and future". *Brain Research Reviews* 48.3(2005): 409-419.

2. Lichterman B L., *et al*. "A comparative history of psychosurgery". *Progress in Brain Research* 270.1 (2022): 1-31.

3. Johnson J. "A dark history: Memories of lobotomy in the new era of psychosurgery". *Medicine Studies* 1 (2009): 367-378.

4. Müller S., *et al*. "Concerns about psychiatric neurosurgery and how they can be overcome: Recommendations for responsible research". *Neuroethics* 15.1 (2022): 6.

5. Stahl D., *et al*. "Should DBS for psychiatric disorders be considered a form of psychosurgery? Ethical and legal considerations". *Science and Engineering Ethics* 24 (2018): 1119-1142.

6. Fins J J. "Neuromodulation, free will and determinism: lessons from the psychosurgery debate". *Clinical Neuroscience Research* 4.1-2 (2004): 113-118.

7. Bernstein M. "Qualitative research to determine social acceptability of neurosurgery for psychiatric disorders".

8. Lipsman N., *et al*. "Personal identity, enhancement and neurosurgery: a qualitative study in applied neuroethics". *Bioethics* 23.6 (2009): 375-383.