EDITORIAL

The Role of Gamma Knife Radiosurgery in Treating Psychiatric Disorders

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Today, psychosurgery is a minimally invasive and highly selective treatment performed only on some patients with severe, refractory treatment, affective, anxious, or obsessive-compulsive disorders. Recent advancements in technology and functional neuroanatomy as well as economic pressures to lower the cost of caring for the chronically ill may provide an opportunity for psychosurgery to become a more attractive option in the treatment of psychiatric disease. (1)

Gamma knife radiosurgery is an option of noninvasive procedures that treating different psychiatric disorders without the need for open surgery and general anaesthesia, and it is an effective procedure with gradual improvement.

The following Psychiatric illness that are treated by gamma knife radiosurgery:

- 1- Obsessive Compulsive Disorders
- 2- Depression
- 3- Anorexia Nervosa
- 4- Autism
- 5- Addiction
- 6- Aggressiveness
- 7- Gilles de la Tourette

Neurosurgical options for severe, refractory psychiatric disorders include stereotactic ablation for:

- 1- Anterior Cingulotomy
- 2- Anterior Capsulotomy,
- 3- Limbic Leucotomy

The therapeutic basis for these procedures derives from interruption.

Such radio surgical techniques may be applied both effectively and safely. During posttreatment follow-up, the vast majority of patients demonstrated gradual reduction of psychiatric symptoms and improvement of the quality of life, which was confirmed by results of regular neuropsychological testing and imaging examinations. No major side effect was observed in any case. More active application of radiosurgery (using standardized technique) for management of mental illnesses in various Gamma Knife centers worldwide should be encouraged.

Steps of management

- 1-Case selection as a refractory psychiatric disorder referred from more than one psychiatrist
- 2-Clinical assessment using special scores like Beck's Depression Inventory score, for assessment of depression, Y BOCS scale for obsessive compulsive disorders.
- 3-Preplanning frame-based MRI gamma protocol with special protocols.
- 4-Localization of target according to the clinical presentation and diagnosis.
- 5-Single or double shots with 4 mm collimator, unilateral or bilateral with a dose ranging from 110-180 Gy with 100% isodose, used for targeting the selected target.
- 6-All the procedures should be done under frame based & there is no role for thermoplastic mask & contraindicated.
- 7- Gradual clinical improvement after radio surgical treatment, with no major side effect observed.
- 8-Clinical improvement based on the assessment scores that mentioned above.
- 9-Radiological changes may need more than six months after the radiosurgery to be seen and notified clearly.

CONCLUSION:

Gamma knife radiosurgery for treating psychiatric disorders is a non invasive procedure with no major ablative indications without the risk of open surgery.

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