

# Gamma Knife Anterior Capsulotomy for Treatment Resistant Obsessive Compulsive Disease

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**Objective(s):** Obsessive Compulsive Disease (OCD) is an impairing chronic neuropsychiatric disorder, characterized by recurrent obsessions in the form of thoughts that cause anxiety, images or impulses, and compulsions that manifest as repetitive behaviors or mental acts aiming to reduce this anxiety. We aimed to present our experience of Gamma Knife Radiosurgery (GKRS) for the treatment of resistant OCD patients.

**Methods:** Twenty-one patients treated with GKRS capsulotomy for severe, treatment resistant OCD between 2011 and 2016 were retrospectively reviewed. Patients were evaluated with neurological and neuropsychological examinations and MRI before and 8 months after GKRS treatment. Radiosurgical capsulotomy was performed using double 4-mm isocenters targeted at the bilateral anterior ventral limb of the internal capsule with a maximum dose of 140 Gy. Beck Depression Inventory (BDI) and Yale–Brown Obsessive Compulsive Scale (Y-BOCS) were used to evaluate the outcomes.

**Results:** Of the 21 patients, 11 were males and 10 were females. The median age was 32 years (20-51 year). The median onset age was 16 year (6-29). Median preGKRS Y-BOCS score was 37 (25-40), and BDI score was 35 (14-51). Fifteen (71%) of the 21 patients achieved response, and 4 (19%) were total responders. Y-BOCS and BDI evaluations post GKRS revealed significant improvement. None of the patients had any neurological symptoms. One patient initially had worsening of symptoms followed by a complete response.

**Conclusion(s):** Anterior capsulotomy performed with GKRS is an effective and well tolerated treatment modality for severe and treatment resistant OCD.

Frontiers of Radiosurgery - October 24-25, 2019 - Milano, Italy



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