Endoscopic management of a low-grade thalamic glioma: a safe alternative to open microsurgery?

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Abstract

BACKGROUND: Despite considerable advances in preoperative and intraoperative imaging and neuronavigation, resection of thalamic gliomas remains challenging. Although both endoscopic biopsy and third ventriculostomy (ETV) for the treatment of secondary hydrocephalus are commonly performed, endoscopic resection of thalamic gliomas has been very sparsely described.

METHOD: We report and illustrate the surgical procedure and patient's outcome after full endoscopic resection of a thalamic glioma and to discuss this approach as an alternative to open microsurgery.

RESULTS: In 2016, a 56-year-old woman presented with disorientation, dysphasia and right facial hypaesthesia in our department. Cranial magnetic resonance imaging revealed a left thalamic lesion and subsequent hydrocephalus. Initially, hydrocephalus was treated by ETV but forceps biopsy was not diagnostic. However, metabolism in 18F-fluoroethyl-L-tyrosine positron emission tomography indicated glioma. Subsequently, endoscopic and neuronavigation-guided tumour resection was performed using a <1 cm, trans-sulcal approach through the left posterior horn of the lateral ventricle. While visibility was poor using the intraoperative microscope, neuroendoscopy provided excellent visualisation and allowed safe tumour debulking. Neither haemorrhage from the tumour or collapse of the cavity compromised endoscopic resection.

CONCLUSIONS: In accordance with one previously published case of endoscopic resection of a thalamic glioma, no surgery-related complications were observed. Although this remains to be determined in larger series, endoscopic resection of these lesions might be a safe and feasible alternative to biopsy or open surgery. Future studies should also aim to identify patients specifically eligible for these approaches.

KEYWORDS: Endoscopic third ventriculostomy; Glioma; Neuroendoscopy; Resection; Thalamic

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