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Robotic assisted endoscopic disconnection of hypothalamic hamartoma in the management of drug resistant epilepsy

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Introduction: Drug resistant gelastic seizures (GS), with early onset, are considered typical of the presence of Hypothalamic Hamartoma (HH), which is well known to be intrinsically epileptogenic. Since HH seizures are drug resistant, resective surgery has been performed with good seizure outcome but with significant rate of post-operative sequaele. The aim of this work is to assess the endoscopic disconnective surgery as an alternative and safer technique to resection in epilepsy HH related.

Methods: Data were collected from 12 patients (9M, 3F) who underwent robotic assisted endoscopic disconnection of HH between January 2010 and June 2013. Intraoperative recording was performed in five cases. Data included seizures outcome, endocrinological and neuropsychological assessment before and after surgery.

Results: Mean age at first disconnection was 7 yrs, mean span of the epilepsy before surgery was 7,7 yrs. All patients had gelastic seizures, most of them had also simple partial seizures. An overall of 17 robotic assisted endoscopic procedures were performed. Mean follow up was 13 months. After the first disconnection 5 patients became seizures free, 6 patients had an improvement of 45% (range 20%-75%) and one patient didn't improve. Five patients underwent a second disconnection: 2 patients became seizure free, 2 had an improvement of 70% (range 50%-90%), one didn't improve. Two patients had transient post operative neurological complications. After surgery working memory didn't worsen. No endocrinological disorders were observed.

Conclusion: Disconnective technique is a feasible and safe procedure which allows in drug resistant epilepsy, HH related, a rate of seizures control outcome similar to resective procedures with a lower surgical and post operative complication rate.