Hypertrophic Olivary Degeneration: Neurosurgical Perspective



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Introduction

Hypertrophic olivary degeneration (HOD) occurs as a result of posterior fossa or brainstem lesion that disrupt the dentato-rubro-olivary tract, well known as the Guillain-Mollaret triangle. Radiological and clinical manifestations of this situation are T2 hyperintensity of the inferior olivary complex on MRI and, palatal myoclonus respectively. As symptomatic HOD may complicate the improvement of patients with posterior fossa or brainstem lesions, the object of this study is to evaluate clinical and radiological findings of patients with HOD.

Methods

15 patients (7 female and 8 male) with a mean age of 41.7(range:5-83) years were included in this study based on clinical symptoms and MRI findings.

Results

Seven (46.6%) patients had posterior fossa tumors, five (33.3%) patients had cavernoma, two patients (13.4%) sustained traumatic brain injury, and only one (6.7%) patient presented with cerebellar infarction. Posterior fossa surgery was performed in 13(86.6%) of these patients. HOD was detected mean 6.8 (range: 0.5-18) months following surgery or primary neurological insult. Unilateral HOD was observed in nine (60%) cases, while bilateral HOD was observed in only six (40%) cases. Seven cases (46.6%) were asymptomatic from HOD, whereas 4 (26.6%) had symptoms attributable to HOD. Two patients died due to primary tumors, though mean after detection of HOD on MRI was 52.2 (range: 1-120) months in the remaining 13 cases. In these cases, no change in clinical symptoms or radiological findings was determined during follow-up.

Conclusions

In this series, the most common etiology of HOD was posterior fossa tumors and cavernomas. Even though most of the patients with HOD remained asymptomatic, HOD complicated the process of recovery in about one quarter of the patients included in this study.

Neurosurgeons should be aware of HOD, which has characteristic clinical symptoms and imaging findings, and may complicate the improvement of patients with distruption to the dentato-rubro-olivary tract.

Learning Objectives

By the conclusion of this session, participants should be able to:

- 1) Describe the importance of hypertrophic olivary degeneration
- 2) Discuss, in small groups, about hypertrophic olivary degeneration
- 3) Identify an effective treatment of hypertrophic olivary degeneration

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