

Timing of surgery for pituitary adenomas and visual recovery: a systematic review and Meta-analysis

N. Lambda, **C. Eenhorst**, I. Muskens, T. Smith, M. Broekman

Cushing Neurosurgery Outcomes Center, Brigham and Women's Hospital, Harvard Medical School, Boston, USA; Brain Center Rudolf Magnus, University Medical Center Utrecht, The Netherlands; Massachusetts General Hospital, Boston, USA

Pituitary adenomas are one of the most common central nervous tumors that often presents with symptoms related to chiasmal compression. In literature, it has been reported that up to 75% of patients with pituitary adenomas have visual field defects, with the most common presenting symptom being complete or incomplete bitemporal hemianopia. Other defects as monocular blindness with temporal defect in the contralateral eye, junctional scotoma, homonymous hemianopia, monocular superior temporal defect, and central or temporal scotoma in both or one eye are seen as well.

Surgical resection of these tumors is thought to result in improvement of visual function. However, little is known about the importance of timing of the procedure. This results in different practices throughout the world. In some countries, surgery will be performed to alleviate current visual complaints, whereas in others the goal of surgery is to prevent the development of future symptoms.

To better understand timing of surgery on overall visual prognosis and to identify potential other factors related to visual improvement after surgery in pituitary adenoma patients, we will conduct a systematic review using PubMed, EMBASE, and Cochrane databases. Articles will be queried from their inception date through June 2016. Pooled effect estimates will be calculated using fixed- and random-effects models. Primary outcome is postoperative patient visual field function. Secondary outcomes include endocrine function and postoperative complications.

The data presented will inform us about when to best operate pituitary adenoma patients.