Neurosurgery Publishes New CNS Guidelines for Nonfunctioning Pituitary Adenomas

September 19, 2016 – Nonfunctioning pituitary adenomas (NFPAs) are common benign tumors that may be present for years before causing any symptoms. A new set of research-based guidelines for evaluation and treatment of NFPAs appears in the October issue of Neurosurgery, official journal of the Congress of Neurological Surgeons. The journal is published by Wolters Kluwer.

The Congress of Neurological Surgeons (CNS) developed these guidelines to provide a "framework to help with decision-making" in caring for patients with NFPAs, based on comprehensive analysis of available scientific data. The recommendations were created by a multidisciplinary task force of experts, on behalf of the CNS.

Updated Review of Evidence on Management and Surgery for NFPAs

Nonfunctioning pituitary adenomas are benign (non-cancerous) growths on the pituitary gland—the body's "master gland," located near the base of the brain. Based on autopsy and brain imaging studies, up to 1 out of 6 people may have some type of pituitary adenoma.

While most pituitary tumors produce hormones, NFPAs do not—that is why they are called "nonfunctioning." Up to 30 percent of pituitary adenomas are NFPAs. These nonfunctioning tumors can go undetected for many years before they become large enough to interfere with neighboring structures ("mass effect").

In this situation, surgery is clearly indicated. But neurosurgeons have lacked clear guidelines on other aspects of management, particularly for the many NFPAs detected incidentally on brain imaging studies performed for other reasons.

To address this gap, the task force performed a comprehensive review of relevant research, with the goal of developing guidelines for management of NFPAs, based on the best available evidence. The full guidelines are available on the Congress of Neurological Surgeons website. An executive summary of the entire guidelines along with executive summaries for each individual chapter appear in the October issue of Neurosurgery. Links to the full guidelines can also be found in the October issue of Neurosurgery.

Based on analysis of 300 research studies, the guidelines address seven critical topics for neurosurgeons managing NFPAs:

- Imaging evaluation of NFPAs, emphasizing the roles of magnetic resonance imaging (MRI) and computed tomography (CT) scans.
- Endocrine (hormonal) evaluation. Many patients with NFPAs have abnormal levels of pituitary hormones, growth hormone, and sex hormones.
- Eye and vision (ophthalmological) evaluation. Some patients with NFPAs develop vision symptoms, which may improve after surgical treatment.
- Initial management of NFPAs. Studies have consistently shown the effectiveness of surgery for patients with symptomatic NFPAs, including improvement in vision and hormonal status. Radiation and other treatments may play a role when surgery isn’t an option.
- Surgical techniques for NFPA. Patients may undergo "transsphenoidal" (through the sinuses) or less-invasive endoscopic surgery, or a combination of the two.
- Options for patients with NFPAs that recur or regrow, usually including some type of radiation therapy.
- Recommendations for follow-up. Patients need long-term monitoring after surgery for NFPAs, including evaluation of tumor recurrence and hormonal and vision status.
While highlighting the considerable body of evidence to guide management of NFPAs, the task force notes a lack of "level I" recommendations based on evidence from randomized clinical trials. They conclude, "In the future, better-powered studies will hopefully enable more high-level recommendations for NFPA patient management."

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