

# NEURO-ENDOCRINE TUMOR CENTER

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## AT SAINT JOHN'S HEALTH CENTER

*Daniel F. Kelly, M.D., Director of the Neuro-Endocrine Tumor Center at the John Wayne Cancer Institute and Saint John's Health Center in Santa Monica, California.*

### **Adenoma sub-type 4: Endocrine-inactive (non-functional) adenoma**

Endocrine-inactive adenomas do not result in excess hormone production. Instead they typically cause symptoms due to pressure on the normal pituitary gland and/or on structures near the pituitary such as the optic nerves and optic chiasm.

#### ***Symptoms***

Typical complaints of patients with an endocrine-inactive adenoma are those of hypopituitarism, vision loss and headache. Hypopituitarism may manifest itself as fatigue, decreased mental function, weight gain, lethargy, joint pains, loss of sex drive, infertility and in women, irregular periods or amenorrhea. Almost all of the symptomatic endocrine-inactive adenomas are macroadenomas when diagnosed. Occasionally, they grow quite large and into the cavernous sinus, causing nerve compression and double vision. Some patients with large tumors may have acute hemorrhage into the tumor (pituitary apoplexy) causing a relatively sudden onset of headache, vision loss, double vision, and/or pituitary failure.

#### ***Diagnosis***

Endocrine-inactive adenomas are best diagnosed by imaging studies and hormonal testing. An MRI of the pituitary gland performed without and with gadolinium provides the most detail, although a brain MRI or brain CT scan will also reveal most pituitary macroadenomas. Hormonal Testing is also essential to evaluate for pituitary gland failure (hypopituitarism). A complete pituitary hormonal analysis should be performed as described above and is ideally overseen by an endocrinologist.

#### ***Treatment***

**Transsphenoidal Surgery:** Recommended for the great majority of patients with symptomatic endocrine-inactive adenomas. The long-term cure or control rate is approximately 70-80% overall. The cure rate is generally higher for smaller tumors and those that do not invade the cavernous sinus; conversely, the cure rate is lower for larger tumors (over 3 cm) and those that invade the cavernous sinus. Overall, transsphenoidal tumor removal improves visual acuity and visual field deficits in 75-90% of patients and headache resolution is seen in 80-90% of

patients. Pituitary function is restored in only 20-50% of patients. Patients who do not have hormonal recovery after surgery will require long-term hormone replacement therapy. Because the transsphenoidal approach is so effective and relatively safe, it is rare that even large macroadenomas warrant a transcranial operation as the initial procedure.

**Medical therapy:** There is no effective medical therapy that reliably halts growth of endocrine-inactive adenomas.

**Radiosurgery (SRS) or Stereotactic Radiotherapy (SRT):** For patients who have residual tumor after the initial transsphenoidal surgery, SRT, SRS, or both (which provide precise dosage of radiation directly to the tumor) may be recommended if the tumor grows. Both SRT and SRS are effective in controlling tumor growth in at least 80-90% of patients. However, SRT and SRS may result in loss of normal pituitary function over 5 to 10 years. Neurologic complications such as visual loss and temporal lobe damage rarely occur with SRT and SRS.