

REVIEWED

By Chris at 1:32 pm, Dec 16, 2015

Neurology and Neurosurgery

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Pituitary Adenomas

Pituitary adenomas are common benign tumors of the pituitary gland. It is said that up to 10% of people will have a pituitary adenoma (which might never have caused a problem) by the time of their death. Some tumors secrete one or more hormones in excess. Such so-called **secretory pituitary adenomas** are usually found due to hormonal imbalances that affect bodily functions. They may be relatively small when detected.

People can develop pituitary adenomas at any age. Most pituitary adenomas are in the front part (anterior lobe) of the pituitary gland.



Pre-op image of pituitary macroadenoma



Post-op image of pituitary macroadenoma

Types of pituitary adenomas:

There are multiple types of adenomas, classified by size and whether they produce hormones.

Secreting tumors, functioning tumors, or endocrine-active tumors

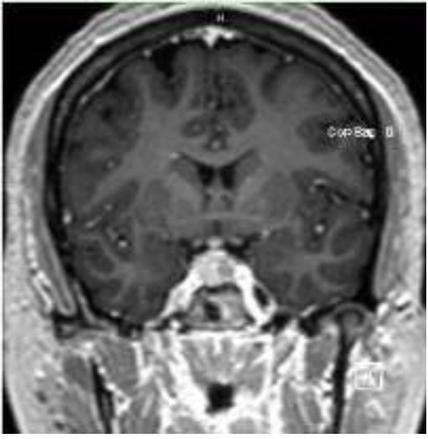
About 50% of adenomas produce too much of one of the hormones. These adenomas are called secreting tumors, functioning tumors or endocrine-active tumors.

Non-functioning or endocrine-inactive pituitary tumors

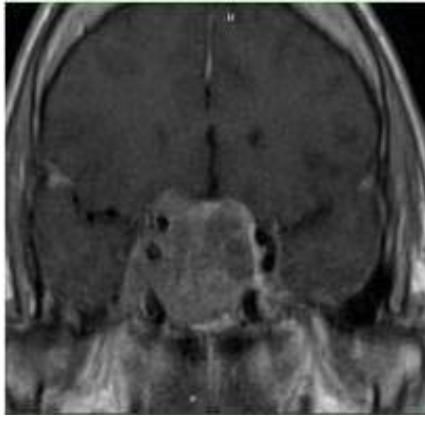
Some secreting tumors produce more than one type of hormone, causing [hypeprolactinemia](#), [acromegaly](#) or [Cushing's disease](#). Non-secreting pituitary tumors do not make extra hormones. They are also called non-functioning or endocrine-inactive pituitary tumors.

Pituitary adenomas have specific signs and symptoms that are primarily related to the endocrinopathies produced by **hypersecretion**.

- The prolactin-secreting pituitary adenomas are the most common, and account for approximately 30% of all pituitary tumors. The clinical findings are galactorrhea and reproductive dysfunction.
- The endocrinopathy of excess growth hormone results in enlargement of the extremities, face and the soft tissues, producing a characteristic appearance called [acromegaly](#). Acromegaly can be associated with **hypertension**, **diabetes mellitus** and **cardiovascular disease**. Further, acromegaly is associated with decreased life expectancy.



ACTH Producing Tumor
(Cushing's Disease)



Growth Hormone Producing Tumor (Acromegaly)

Prolactinoma: prolactin-secreting pituitary adenoma

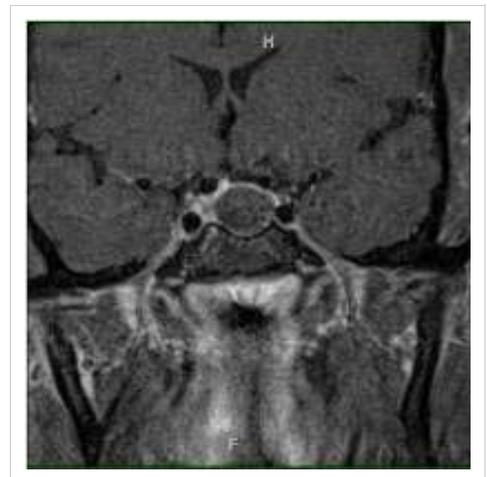
Prolactinoma is a type of pituitary tumor that produces prolactin. The prolactin hormone stimulates milk production from the breasts. Prolactinomas may present with visual symptoms due to compression of the optic chiasm if the tumor is large. Prolactin levels in the blood help to make the diagnosis as these levels can be very high. The levels of prolactin are useful to monitor the success of treatment (prolactin levels decrease after treatment).

Microadenoma: <10mm

A pituitary adenoma that is smaller than 10 mm in diameter (about three-fourths of an inch across) is called a **microadenoma**.

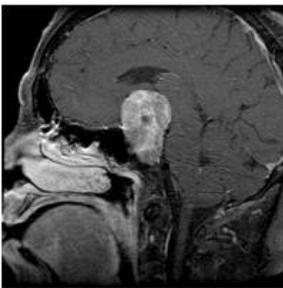
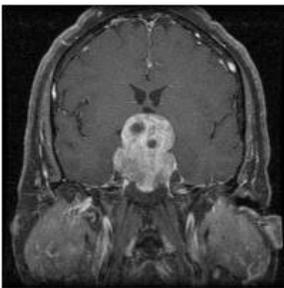
Macroadenoma: >10mm

A pituitary adenoma equal to or larger than 10 mm is called a **macroadenoma**.

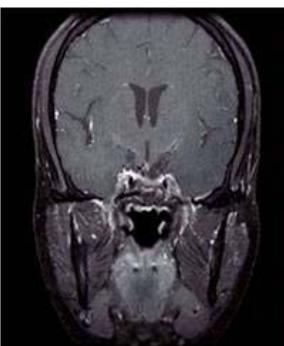


A coronal image demonstrates a prolactinoma on the left side of the pituitary gland

Pre-operative images of patient with non-functional pituitary macroadenoma



Post-operative images of patient with non-functional pituitary macroadenoma who underwent endonasal transphenoidal endoscopic-assisted resection



Symptoms of an adenoma:

The most common symptoms include:

- Headaches
- Vision problems that cannot be easily explained
- Menstrual cycle changes in women
- Mood swings or behavior changes
- Erectile dysfunction
- Weight change

Diagnosis of an adenoma:

Blood and urine tests to measure hormone levels and medical imaging provide the best means of diagnosing pituitary tumors. Diagnostic imaging may include a high-resolution, T1 weighted, gadolinium enhanced MRI. In addition, blood and urine tests to obtain endocrine diagnostics may be performed to establish basal levels of PRL, GH, IGF-1, free thyroxine, cortisol, and testosterone (in males) levels.

Treatment of an adenoma:

Specific treatment for adenomas is coordinated by a **neurosurgeon** and **endocrinologist** (hormonal disorder specialist) on the [Pituitary Tumor team](#). Treatment may include [surgery](#), including surgical removal via a procedure called [endonasal transphenoidal endoscopic surgery](#), [medical therapy](#), [radiation therapy](#), hormone therapy, and/or [observation](#).

For more information, [contact](#) the Pituitary Tumor Center.

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