

Giant Invasive Pituitary Adenoma: Transcranial Or Transsphenoidal?

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The majority of Pituitary tumors are noninvasive benign adenomas. Microadenomas and most Macroadenomas are amendable to endonasal transsphenoidal (microscopic / endoscopic) removal. Giant (>4 cm) pituitary macroadenomas often require surgery to decompress the optic nerves. < 10% of Giant Macroadenomas would need a transcranial approach.

There are several ways to classify Pituitary adenomas. Often there is confusion or ambiguity between the growth being 'invasive' and that being 'aggressive'. Invasive Pituitary Tumors account for about half of Pituitary Tumors (depending on the criteria used) and infiltrate dura, bone & /or surrounding tissues. Such tumors are not considered to be malignant, and in terms of biological behavior, are for the most part, clinically benign, even when dural invasion is marked

Aggressive Pituitary Tumors are not yet well-defined. Early detection is needed. Emerging markers for identification may indicate usefulness of Anti VEGF therapy, mTOR & Tyrosine Kinase inhibitors. Aggressive pituitary tumors are thought to have a greater chance of giving rise to pituitary carcinomas with cerebrospinal or systemic metastases. Even early recurrence of a completely removed tumor could be termed as aggressive.

First line of treatment for all symptomatic pituitary tumors (except medically responsive prolactinomas) is surgery. Choice of surgical approach can be *Extra cranial (Trans sphenoidal) or Trans cranial* (sub frontal, pterional, orbito zygomatic, sub temporal) Although the preferred access to pituitary tumors is the transsphenoidal route, 1-4% of pituitary tumors still require a craniotomy for optimal management. Choice of surgical approach for transcranial are, dumbbell- shaped lesions with severe constriction at the diaphragm sellae, parasellar extension, inaccessible suprasellar extension, fibrous pituitary adenoma with large suprasellar extension, active sinus infection, co-existence of pituitary adenoma and adjacent aneurysm, ectatic Intracellular "kissing" carotid arteries (Rarely seen but more commonly so in acromegaly). For suprasellar extension the approach may be uni or bifrontal, and the latter may be subfrontal or inter-hemispheric. For parasellar extensions we go transsylvian (Pterional or FOTZ).

The platform presentation will also show typical cases of some of these approaches, their indication, results and complications.