

# Pituitary Macroadenomas - Imagistic Evaluation

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**ABSTRACT** As regarding the pituitary pathology, lesions of adenoma types are the most frequent; for many types are the most frequent; for many time diagnoses is complex, including the imagistic one. Pituitary lesions secreting or non-secreting macroadenomas have been characterized by a greater or smaller degree of invasivity. Those lesions extrasellar extension is well appreciated by imagistic methods giving minute information on the tumoral process ranging and on affecting the adjacent anatomical structures. In present paper suggests an imagistic aspects analysis of the macroadenomas extension, by computer tomography and magnetic resonance, each of the methods having its own specificity concerning the correct diagnosis of the pituitary pathology.

**KEY WORDS** *pituitary, macroadenoma, imagistic methods*

## Introduction

Pituitary pathology represents about 14% of the brain tumors. Usually lesions are benigne, of macro- or microadenomas type. Their diagnosis involves clinical and paraclinical data, corroboration from various fields such as: endocrinology, imagery, ophthalmology, neurosurgery and radiation therapy (3, 4, 7).

Pituitary macroadenomas can be secreting or nonsecreting ones, but their extrasellar extension mostly determines the clinical data leading the patient to the doctor.

Imagistic methods, computer tomography and magnetic resonance respectively, represent a real progress for the diagnosis and therapeutic attitude of those diseases (1-3, 6).

Possibility to precisely decelate extrasellar extension brings a significant contribution in firmly assessing all the anatomical structures of the sellar and parasellar regions that can be involved into the pituitary macroadenoma development (1, 7, 8).

## Material and Methods

A set of 15 patients, 10 males and 5 females, diagnosed with pituitary adenomas secreting GH, in 7 males patients, the rest presenting unsystemizing symptomatology (cephalea, sight disorders) was available for the present paper.

CT evaluation was performed in 8 patients by Hitachi Presto; examinations have been natively

and postcontrast made, in fine axial sections, with subsequent sagittaly and coronally reformation.

RM scanning was performed by Airis Mate Hitachi, natively and postcontrastly, with the following scanning parameters : spin-echo or 1-2 mm gradient-echo; big rebuilding 3 mm matrix (512); a small of about 20-23 cm "field of view (FOV).

## Results and Discussions

CT scanning images analysis reveal native native heterogenous and postcontrast brain tumors with pituitary starting point; supra- and lateral sellar extension was established in 12 cases with compression effects onto the optic chiasma, cavernous sinus compression or invasion effects and mass effects upon the adjacent cerebral parenchyma ( figure 1). Another consequence of the suprasellar development of macroadenomas is also the compression upon the ventricle III and Monro orifice obstruction leading to obstructive hydrocephalia.

Infasellar extension from the sphenoidal sinus level was decelated in one case, sagittaly reconstruction was suggestive (figure 2).

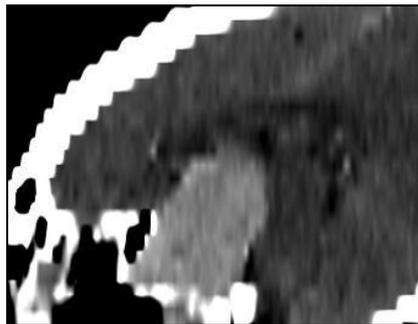
CT evaluated macroadenomas were accompanied by remarkable bony distructions, visible in window for bone and in 3D reconstructions (figure 3).

MR scanning images reveal areas with heterogenous signal in native and postcontrast T1.

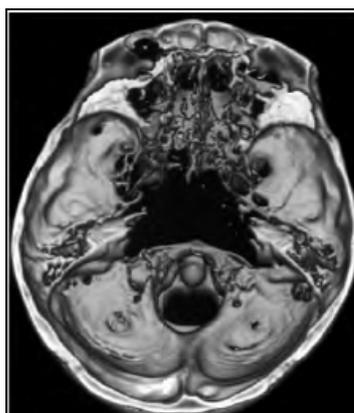
Sagittally and coronally, sequences give minute information on movement, compressions upon the optical the optical chiasma and cavernous sinus was seen in the cases taken to be studied (fig. 4). Compared to CT, bony structures cannot be appreciated with the same clarity. Both CT and MR exams were possible in two patients, suggestive images being displayed below.



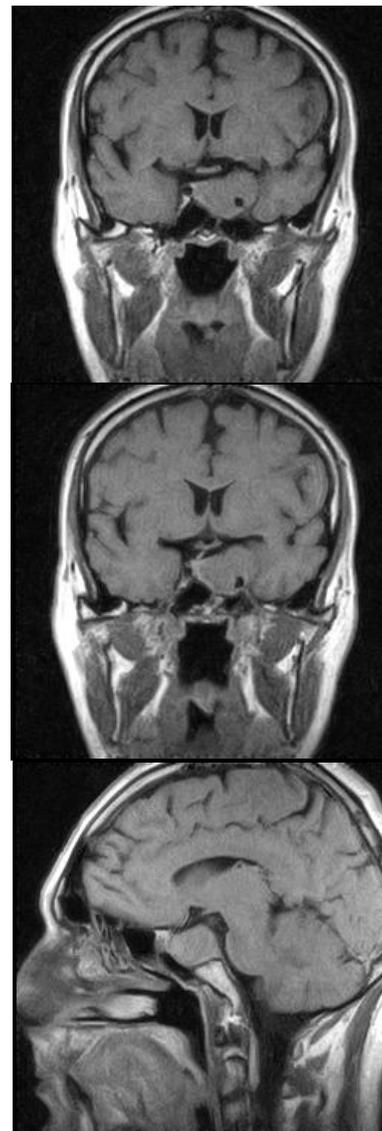
**Figure 1 Pituitary adenoma, axial CT reveals a tumor with supra and laterosellar growth**



**Figure 2 Sagittal CT reconstruction**



**Figure 3 CT 3D reconstruction**



**Figure nr 4 Pituitary macroadenoma. Coronal and sagittal T1-weighted images reveal a large tumor within the cavity of enlarged sella turcica with supra, latero and infra sellar growth.**

Similar aspects comparable to the macroadenomas extension can be easily observed by means of the two imagistic methods: equal sizes, proximity anatomical structure affection. We can, however, state that the two methods were comparable as specificity, regarding extrasellar extension of the pituitary macroadenomas.

In patients with non-secreting adenomas, imagistic aspects explained their symptomatology, the sight disorders were significantly correlated to the mass effect on the optical chiasma, compressions on the adjacent cerebral parenchyma and the secondary obstructive hydrocephalia leading to intense cephalaea.

## Conclusions

1. Pituitary macroadenomas invasive character is correct evaluated by computer tomography and magnetic resonance imposing those investigations to be performed for diagnosis aim.

2. The evaluation of the pituitary macroadenomas extension degree is comparable by the two imagistic methods, with mention that the bony structures changes remain the privilege of the computer tomography.

3. Possibility for the pituitary lesions were visualized in different planes by imagistic methods, gives remarkable information for the subsequent therapeutic either surgical or radiotherapeutic attitude toward the patient.

4. Pituitary macroadenomas imagistic aspects were similar, both those obtained by CT exam and MR scanning.

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