Clinically nonfunctioning pituitary neuroendocrine tumor clinical features

Although NFMAs are benign in origin, mass effects may lead to serious clinical symptoms such as visual disturbance, chronic headache, and hypopituitarism.

At the time of initial diagnosis, visual field defects are detected in 60-80% of NFMA patient ^{1) 2) 3)}.

Heterogeneous patterns of altered diurnal rhythmicity in skin temperature and melatonin secretion parameters were observed in the majority of patients treated for NFMAs. On a group level, both NFMA and craniopharyngioma patients showed a lower daytime proximal skin temperature than control subjects, but other group averages were not significantly different. The observations suggest altered function of central (or peripheral) clock machinery, possibly by disturbed entrainment or damage of the hypothalamic SCN by the suprasellar macroadenoma or its treatment.

NFMA patients suffer from altered sleep-wake rhythmicity. Hydrocortisone dependency may explain part of the decreased daytime functioning, but the independent influence of visual field defects (VFD) and differences between Addison's disease (AD) and NFMA patients point towards a role for dysfunction of the adjacent suprachiasmatic nucleus (SCN)⁴⁾.

Heterogeneous patterns of altered diurnal rhythmicity in skin temperature and melatonin secretion parameters were observed in the majority of patients treated for NFMAs. On a group level, both NFMA and craniopharyngioma patients showed a lower daytime proximal skin temperature than control subjects, but other group averages were not significantly different. The observations suggest altered function of central (or peripheral) clock machinery, possibly by disturbed entrainment or damage of the hypothalamic SCN by the suprasellar macroadenoma or its treatment ⁵.

Spontaneous regression of tumor size was reported in 11% of patients with non-functioning pituitary macroadenoma ⁶⁾. Ischemia of tumor and pituitary apoplexy are some causes of decrease in tumor size. In addition, lymphocytic hypophysitis should be considered in the differential diagnosis ⁷⁾. They do not produce any hormonal hypersecretion syndrome but rather present with symptoms and signs related to the mass effect of the pituitary tumor such as headaches and visual disturbances, due to mass effects, while others may be completely asymptomatic and be first detected on an imaging study done for reasons other than pituitary symptoms or disease, and is known as pituitary incidentaloma.

Somatotroph and Pituitary corticotroph adenomas typically cause clinical syndromes but occasionally are clinically or totally silent.

Those that are silent are usually larger and grow more aggressively than those that cause clinical syndromes. Silent adenomas may become, rarely, clinically apparent over time.

Visual disurbances

They may lead to blindness and causes visual impairment in 58% of cases and, more rarely, ocular motor disorder. Patients are slow to become aware of their visual dysfunction, vision in one eye compensating the deficit in the other. Assessment of visual function, comprising visual acuity and visual field evaluation and fundus examination, should be performed regularly according to the

severity of impairment. Optic nerve optical coherence tomography (OCT) can quantify optic atrophy reproducibly, and is of prognostic value for postoperative visual recovery. Diplopia most often involves decompensation of heterophoria, visual field fusion being hampered by the visual field defect; such diplopia without ocular motor deficit is known as "hemifield slide". Diplopia associated with ocular motor palsy is caused by tumoral invasion of the cavernous sinus (IIIrd, IVth or VIth nerve palsy); in large impairment, restricted eye movement is easily observed; milder palsies require neuro-ophthalmologic assessment and/or Lancaster test. Pituitary apoplexy induces ocular motor impairment in 70% of cases, strongly guiding diagnosis. Visual impairment is associated in 75% of cases. The degree of neuro-ophthalmologic (visual and ocular motor) impairment is one of the main criteria guiding treatment of pituitary apoplexy (conservative medical and/or surgical treatment) and follow-up⁸.

1)

Comtois R, Beauregard H, Somma M, Serri O, Aris-Jilwan N & Hardy J. The clinical and endocrine outcome to trans-sphenoidal microsurgery of nonsecreting pituitary neuroendocrine tumors. Cancer 1991 68 860–866.

Marazuela M, Astigarraga B, Vicente A, Estrada J, Cuerda C, Garcia-Uria J & Lucas T. Recovery of visual and endocrine function following transsphenoidal surgery of large nonfunctioning pituitary neuroendocrine tumors. Journal of Endocrinological Investigation 1994 17 703–707.

Wichers-Rother M, Hoven S, Kristof RA, Bliesener N & Stoffel-Wagner B. Non-Functioning Pituitary Neuroendocrine Tumors: endocrinological and clinical outcome after transsphenoidal and transcranial surgery. Experimental and Clinical Endocrinology and Diabetes 2004 112 323–327.

Joustra SD, Kruijssen E, Verstegen MJ, Pereira AM, Biermasz NR. Determinants of altered sleep-wake rhythmicity in patients treated for nonfunctioning pituitary macroadenomas. J Clin Endocrinol Metab. 2014 Dec;99(12):4497-505. doi: 10.1210/jc.2014-2602. PubMed PMID: 25210880.

Joustra SD, Thijs RD, van den Berg R, van Dijk M, Pereira AM, Lammers GJ, van Someren EJ, Romijn JA, Biermasz NR. Alterations in diurnal rhythmicity in patients treated for nonfunctioning pituitary macroadenoma: a controlled study and literature review. Eur J Endocrinol. 2014 Aug;171(2):217-28. doi: 10.1530/EJE-14-0172. Epub 2014 May 14. Review. PubMed PMID: 24826835.

Dekkers OM, Pereira AM, Romijn JA. Treatment and Follow-Up of Clinically Nonfunctioning. Pituitary Macroadenomas. J Clin Endocrinol Metab. 2008;93:3717–26.

Caturegli P, Newschaffer C, Olivi A, et al. Autoimmune Hypophysitis. Endocr Rev. 2005;26:599-614.

Abouaf L, Vighetto A, Lebas M. Neuro-ophthalmologic exploration in Non-Functioning Pituitary Neuroendocrine Tumor. Ann Endocrinol (Paris). 2015 Jul;76(3):210-9. doi: 10.1016/j.ando.2015.04.006. Epub 2015 Jun 10. PubMed PMID: 26070465.

From: https://neurosurgerywiki.com/wiki/ - Neurosurgery Wiki

Permanent link: https://neurosurgerywiki.com/wiki/doku.php?id=clinically non-functioning pituitary adenoma clinical features

Last update: 2024/06/07 02:53