Lactotroph Adenoma Clinical Features

Hyperprolactinemia may cause galactorrhea and disruptions in the normal menstrual period in women and hypogonadism, infertility and erectile dysfunction in men.

Hyperprolactinaemia can be a part of normal body changes during pregnancy and breastfeeding. It can also be caused by diseases affecting the hypothalamus and pituitary gland. It can also be caused by disruption of the normal regulation of prolactin levels by drugs, medicinal herbs and heavy metals. Hyperprolactinaemia may also be the result of disease of other organs such as the liver, kidneys, ovaries and thyroid.

Manifestations of prolonged hyperprolactinemia:

Females

Amenorrhea Galactorrhea syndrome

Galactorrhea may be spontaneous or expressive

Variants

Oligomenorrhea.

Irregular menstrual cycles.

5 % of women with amenorrhea will be found to have a prolactinoma [1)].

Pregnancy is the most common cause of secondary amenorrhea.

Males

In males the symptoms may be mild or unrecognized. It is the most likely to become large enough to cause mass effect (especially in males or non-menstruating females)

Impotence.

Decreased libido.

Galactorrhea is rare (estrogen is also usually required).

Gynecomastia is rare

Prepubertal prolactinomas may result in small testicles and feminine body habitus.

Either sex

Infertility is common

Bone loss (osteoporosis in women, and both cortical and trabecular osteopenia in men) due to relative estrogen deficiency, not due to the elevated prolactin itself.

Impairment of cognitive functions has been reported in prolactinomas. However, the electrophysiological mechanisms of response activation and response inhibition in prolactinomas remain unclear.

Cao et al. recorded participants' scalp electroencephalography (EEG) in a visual Go/Nogo task. Compared to the healthy controls (HCs), the patients demonstrated worse performance, and their prolactin (PRL) levels negatively correlated with behavioral results. Meanwhile, patients' P300 amplitudes in the Go and Nogo conditions were smaller than the HCs. The amplitudes of N200nogo in patients were smaller than the HCs as well. Lower frontal theta power was found in the patients than the HCs in both Go and Nogo conditions, which indicated a deficit in response activation and inhibition. Moreover, the PRL levels mediated the relationship between frontal theta power and behavior performance, implying that lower frontal theta power caused the dysfunction of response control by abnormally high PRL levels. Patients also showed lower occipital alpha power than the HCs, which suggested that the impaired response inhibition may arise from deficient attention control. Taken together, the present study revealed the neurocognitive discrepancies between prolactinomas and the HCs. The frontal theta oscillation was highlighted as the electrophysiological markers of the impaired response control in prolactinomas [2].

1)
Amar, Arun Paul; Couldwell, William T.; Weiss, Martin H. Amar, Arun Paul; Couldwell, William T.; Weiss, Martin H. Less. Contemporary Neurosurgery. 21(6):1-6, March 1999
2)
Cao C, Wen W, Liu B, Ma P, Li S, Xu G, Song J. Theta oscillations in prolactinomas: Neurocognitive deficits in executive controls. Neuroimage Clin. 2020 Sep 30;28:102455. doi: 10.1016/j.nicl.2020.102455. Epub ahead of print. PMID: 33038668.

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