Hypothyroidism

Chronic primary hypothyroidism may result in (non-pathologic) enlargement of the pituitary gland.

Classification

Primary hypothyroidism may be associated with immunologic destruction of adrenal cortex (Schmidt syndrome). Secondary hypothyroidism may be associated with and may mask reduced adrenal function.

Plasma TSH determination will distinguish primary hypothyroidism (high TSH) from secondary hypothyroidism (low TSH). Wound healing and cardiac function may be compromised, and surgery under general anesthesia should be postponed if possible until thyroid levels are normalized. Effects of anesthesia may be markedly prolonged, and dosages should be adjusted accordingly.

Aneurysmal subarachnoid hemorrhage (aSAH) is a recently identified risk factor for chronic hypothyroidism. Patients with hypothyroidism often exhibit cognitive dysfunction.

Etiology

Pituitary hypothyroidism accounts for only ≈ 2–4% of all hypothyroid cases.

● ≈ 23% of patients with chromophobe adenomas develop secondary hypothyroidism if untreated (pituitary compression causes reduced TSH).

● labs: T4 low, TSH low or normal, reduced response to TRH stimulation test.

Aminoglutethimide.

Transsphenoidal surgery.

After craniopharyngioma surgery, hypoadrenalism may be corrected rapidly, but hypothyroidism takes longer; either condition can increase surgical mortality.

Radiation injury.

Clinical features

Cold intolerance, myxedema, entrapment neuropathies (e.g. carpal tunnel syndrome), weight gain, memory disturbance, integumentary changes (dry skin, coarse hair, brittle nails), constipation, increased sleep demand.

Diagnosis

T4 ↓ & TSH ↑ in primary hypothyroidism (this may cause thyrotroph hyperplasia in pituitary gland).

● T4 ↓ & TSH nl or ↓ in secondary hypothyroidism (as in hypopituitarism).

Complications

Condition affecting ocular motility that could mimic the upgaze palsy of Parinaud's syndrome.

Hyponatremia

Myxedema coma is an emergency of hypothyroidism and carries 50% mortality.

see Central hypothyroidism.

Entrapment neuropathy: Carpal tunnel syndrome.

Spinal epidural lipomatosis.

Thyrotroph hyperplasia due to primary hypothyroidism causing chronic pituitary stimulation by TRH. Typically: free T4 low or normal, TSH ↑ ↑ , symmetrical sellar mass on MRI.

Myalgia.Maybe a side-effect of "statins"(drugs used to lower serum concentration of LDL cholesterol) with or without elevation of serum creatinine phosphokinase, sometimes with accompanying weakness and rarely with severe rhabdomyolysis and myoglobinuria leading to renal failure (risk may be increased with renal or hepatic dysfunction, advanced age, hypothyroidism, or serious infection).

Ideally, hypothyroid patients should have >4 weeks of replacement to reverse hypothyroidism, however:

a) do not replace thyroid hormone until the adrenal axis is assessed; giving thyroid replacement to a patient with hypoadrenalism can precipitate adrenal crisis. If hypoadrenal, begin cortisol replacement first, may begin thyroid hormone replacement after 24 hours of cortisol

b) surgery is done frequently on patients with hypothyroidism and appears to be tolerated well in the vast majority of cases