

Cushing's Syndrome

Symptoms resulting from chronic glucocorticoid excess.

Terminology

- Cushing's syndrome = symptoms resulting from chronic glucocorticoid excess
- Cushing's disease = ACTH-producing pituitary tumour causing Cushing's syndrome
- Nelson's syndrome = symptoms resulting from rapid enlargement of a pre-existing pituitary tumour after bilateral adrenalectomy

Causes

- ACTH-dependant
 - Cushing's disease (i.e. ACTH-secreting pituitary tumour)
 - Ectopic ACTH secretion (small cell lung cancer most common cause)
- ACTH-independent
 - Iatrogenic (steroid treatment) – **MOST COMMON**
 - Adrenal adenoma/ carcinoma
 - Adrenal hyperplasia

Clinical features

- Fat redistribution: weight increase, central obesity, moon face, intrascapular and supraclavicular fat pads
- Skin: bruising, skin thinning, purple abdominal striae
- Mood changes
- Proximal myopathy
- Hypertension
- Impaired glucose tolerance and diabetes mellitus
- Pigmentation (ACTH-dependant causes)
- Hypokalaemia

Investigations

Confirming Cushing's syndrome diagnosis:

- First-line tests (use one)
 - Overnight dexamethasone suppression test (normally cortisol is suppressed by exogenous steroids, but not in Cushing's syndrome)
 - 24-hour urinary cortisol
- Second-line tests (if needed)
 - 48-hour dexamethasone suppression test
 - Midnight cortisol

Localising causative lesion:

1. Plasma ACTH
2. -If low: CT adrenals (look for adrenal tumour/ hyperplasia)
-If high: high-dose dexamethasone suppression test (ACTH from a pituitary tumour is still suppressible at high exogenous steroid doses, whereas ectopic ACTH is not)
 - ↳ if cortisol is not suppressed, CT thorax (look for ectopic ACTH source)
 - ↳ if cortisol is suppressed, MRI pituitary / bilateral petrosal sinus sample (confirm pituitary tumour)

Management

- Metyrapone/Ketoconazole to control symptoms if needed
- Treat cause
 - Transsphenoidal resection (Cushing's disease)
 - Bilateral adrenalectomy (if source cannot be localised/ recurrent post-surgery/ adrenal problems)
NB. complication = Nelson's syndrome if Cushing's disease was the cause



Central adiposity and striae



Buccal pigmentation



Telangiectasia