Examination of the pituitary

When confronted with this examination there are a few considerations to be made. Pituitary adenomas are relatively common and you should consider the frequency of hormonal abnormalities.

Hyper-pituitarism: Prolactin > Growth hormone > ACTH > LH/FSH and TSH
Hypo-pituitarism: LH/FSH > Growth hormone > ACTH, TSH and Prolactin.

In an examination, it is unlikely to be pan-hypopituitarism, but most likely to be either acromegaly or cushings syndrome. If it is obvious which one is present then you could go along the route of demonstrating you know what you would expect to find with that disease; alternatively it may be safer to comment on the negatives to exclude the other conditions.

Global inspection can give diagnosis. Typical facies of acromagaly vs moon facies with obvious centripetal adiposity with thin limbs.

ASK IF THE PATIENT HAS A PHOTO OF THEMSELVES A FEW YEARS AGO – often in exams patients will have photos with them, so you can identify the facial features that have altered especially with acromegaly

Hands

- Large spade like hands (acromegaly)
- Thickened, doughy skin (acromegaly)
- Thinned skin (cushings)
- Purpura (cushings)
- Nail changes e.g. onycholysis (acromegaly)
- Sweaty palms (acromegaly)
- Signs of carpal tunnel syndrome e.g. scar, thenar wasting (acromegaly)

Pulse/ABP

- Cardiomyopathy with acromegaly could lead to arrhythmia
- Hypertension may be present

Arms

- Purpura (cushings)
- Proximal myopathy – test shoulder abduction/adduction (cushings)

Face

- Moon face (cushings)
- Buffalo hump (cushings)
- Supraclavicular fat pads (cushings)
- Acne/hirsutism (cushings)
- Supraorbital prominence (acromegaly)

- Frontal bossing (acromegaly)
- Enlargened ears and nose (acromegaly)
- Prognathism (acromegaly)
- Widened interdental space (acromegaly)
- Macroglossia (acromegaly)
- Prominent veins (acromegaly)

Eyes

- Test confrontation looking for a bitemporal hemianopia
- Fundoscopy - papilloedema

Chest/Abdomen

- Inspect for obvious deformity/scar
- Gynaecomastia
- Galactorrhoea (prolactinoma)
- Offer palpation of apex – cardiomyopathy (acromegaly)
- Inspect for centripetal adiposity (cushings)
- Inspect for striae (cushings)
- Offer palpation for organomegaly which can occur in acromagaly

Lower limbs

- Test for proximal myopathy by asking the patient to stand with arms crossed.

Note: depending on wording of station should also consider looking for signs of thyroid disease (but very rarely due to pituitary disease). See neck examination scheme for details

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Hopefully the diagnosis will be obvious and you should be able to demonstrate that you are aware of what you might expect to find in the condition that the patient has.

Ensure that you are aware of the investigation and management of these conditions. Including:

Cushings:

- 24 hour urinary cortisol
- Overnight dexamethasone suppression test

These are used ton confirm hypercortisolaemia. Next is the challenge to identify the source.

ACTH measurement will identify if this is adrenal (suppressed ACTH) or extra-adrenal (raised ACTH)

If adrenal suggested, next step would include CT abdomen to identify the adrenal adenoma.

If extra-adrenal, the situation is more complex. This could be due to pituitary adenoma (= Cushings DISEASE) or due to ectopic ACTH production e.g. small cell lung carcinoma.

Can perform high dose dexamethasone suppression test, which can usually suppress a pituitary source. If pituitary suggested can perform MRI (but benign adenomas present in significant proportion of population). Also there is BIPS (bilateral petrosal sinus catheterisation)

If negative, suggests ectopic source and efforts to identify this employed.

Acromagaly

- Glucose tolerance test – should lead to suppressed GH level. If not suggests dys-regulated production.
- Pituitary imaging

Management
- somatostatin analogue e.g. octreotide which suppresses GH secretion
- trans-sphenoidal hypophysectomy
- radiotherapy (takes months to have effect)