PIPADOR REVISION

# MRCOG Part 1 Revision Notes

## *Cushing's Disease*

ENDOCRINOLOGY • LECTURE 194

VISUAL EXAMINATION REVISION NOTES

*2026 Edition*

194

MRCOG PART 1 REVISION NOTES | ENDOCRINOLOGY

# Cushing's Disease

*Cushing's syndrome and disease — causes, diagnosis in pregnancy, complications and management*

| Exogenous | Pituitary | ≈ 40–50% | > 3× ULN |
|---|---|---|---|
| Steroids — commonest cause of Cushing's | Cushing's DISEASE (ACTH adenoma) | Adrenal cause among pregnant cases | Urinary free cortisol (pregnancy cut-off) |

**■ KEY FACTS: Learning objectives**

- Define Cushing's syndrome and Cushing's disease and describe their causes and features.
- Describe the diagnostic algorithm and its limitations in pregnancy.
- Describe maternal and fetal complications and management in pregnancy.

## 194.1 Definitions and causes

| Category | Causes |
|---|---|
| **ACTH-independent** | Exogenous glucocorticoids (commonest), adrenal adenoma/carcinoma, bilateral nodular hyperplasia |
| **ACTH-dependent** | Cushing's disease (pituitary corticotroph adenoma — ≈ 70% of endogenous cases outside pregnancy), ectopic ACTH (small-cell lung, carcinoid) |
| **Pregnancy** | Rare (hypercortisolism suppresses gonadotrophins → anovulation); adrenal causes relatively more common (≈ 40–50%); some cases are pregnancy-induced via aberrant LH/hCG receptors on adrenal tissue |

| Features suggesting Cushing's | Overlap with normal pregnancy |
|---|---|
| Proximal myopathy, easy bruising, purple striae > 1 cm, thin skin, plethora, supraclavicular/dorsocervical fat, hypertension, hypokalaemia, osteoporotic fractures, early hyperglycaemia | Weight gain, fatigue, oedema, pale/pink striae, mood change, hypertension (pre-eclampsia), GDM |

## 194.2 Diagnosis

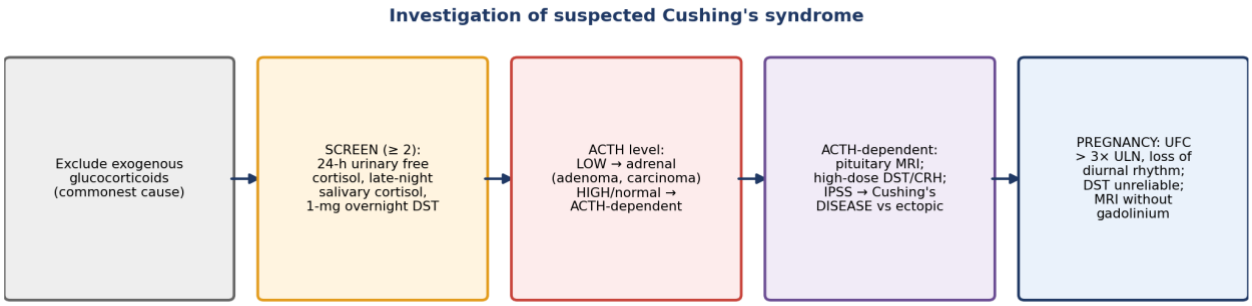



*Figure 194.1 — Diagnostic pathway*

- Pregnancy raises **CBG, total and free cortisol** and blunts dexamethasone suppression → **overnight dexamethasone suppression test is unreliable** (false positives).
- Preferred: **24-h urinary free cortisol** (diagnostic if **> 3× upper limit** in 2nd/3rd trimester) and **loss of diurnal rhythm** (late-night salivary/serum cortisol).

- **ACTH** distinguishes adrenal (suppressed) from pituitary/ectopic; **adrenal ultrasound/MRI** and **pituitary MRI without gadolinium**; avoid CT/IPSS where possible.

## 194.3 Complications

| Maternal | Fetal |
|---|---|
| Hypertension (≈ 70%), pre-eclampsia, GDM, heart failure, poor wound healing, infection, osteoporotic fracture, psychiatric illness, maternal death | Miscarriage, preterm birth, FGR, stillbirth; neonatal adrenal insufficiency (rare — fetal HPA suppression) |

## 194.4 Management in pregnancy

| Option | Notes |
|---|---|
| **Surgery** | Transsphenoidal adenectomy or laparoscopic adrenalectomy in the 2nd trimester — associated with improved fetal outcomes; perioperative steroid cover and post-op replacement |
| **Medical** | Metyrapone (11β-hydroxylase inhibitor) — most experience; can worsen hypertension/pre-eclampsia (↑ mineralocorticoid precursors). Ketoconazole (anti-androgenic) used cautiously; mifepristone contraindicated (abortifacient); cabergoline in selected pituitary cases |
| **Supportive** | Treat hypertension and GDM, VTE prophylaxis, fetal growth surveillance, timing of delivery individualised |
| **Iatrogenic Cushing's** | Lowest effective steroid dose; screen for GDM; steroid cover in labour |

## 194.5 Must-know summary

■ EXAM TIP

- Cushing's **syndrome** = cortisol excess (any cause); Cushing's **disease** = pituitary ACTH adenoma.
- Pregnancy: adrenal causes relatively common; physiological hypercortisolism confounds tests — use **UFC > 3× ULN** and loss of diurnal rhythm; DST unreliable.
- Complications: hypertension, pre-eclampsia, GDM, preterm birth, FGR.
- Surgery in 2nd trimester; metyrapone medically; mifepristone contraindicated.

■ MNEMONIC / MEMORY AID

**Cushing's features — 'CUSHINGOID'**: Cataracts, Ulcers, Striae/skin thin, Hypertension/hirsutism, Infection, Necrosis (AVN), Glucose ↑, Osteoporosis/obesity, Immunosuppression, Depression.