PIPADOR REVISION

MRCOG Part 1 Revision Notes

Phaeochromocytoma

ENDOCRINOLOGY • LECTURE 196

VISUAL EXAMINATION REVISION NOTES

2026 Edition

196

MRCOG PART 1 REVISION NOTES | ENDOCRINOLOGY

Phaeochromocytoma

Pathophysiology, presentation versus pre-eclampsia, diagnosis and management in pregnancy

≈ 1 : 50,000	≈ 30–40%	Metanephrines	α → β
Pregnancies	Hereditary (MEN2, VHL, NF1, SDH)	Plasma free / 24-h urinary	Blockade order

■ **KEY FACTS: Learning objectives**

- Describe the pathophysiology and presentation of phaeochromocytoma/paraganglioma.
- Distinguish phaeochromocytoma from pre-eclampsia.
- Describe diagnosis and the medical, surgical, obstetric and anaesthetic management in pregnancy.

196.1 Pathophysiology

Catecholamine-secreting tumours of **adrenal medullary chromaffin cells** (phaeochromocytoma) or extra-adrenal sympathetic ganglia (**paraganglioma**). Episodic or sustained release of noradrenaline/adrenaline → α (vasoconstriction, hypertension) and β (tachycardia, arrhythmia, hyperglycaemia) effects. Untreated, **maternal and fetal mortality is high**; uteroplacental vasoconstriction causes FGR and fetal death.

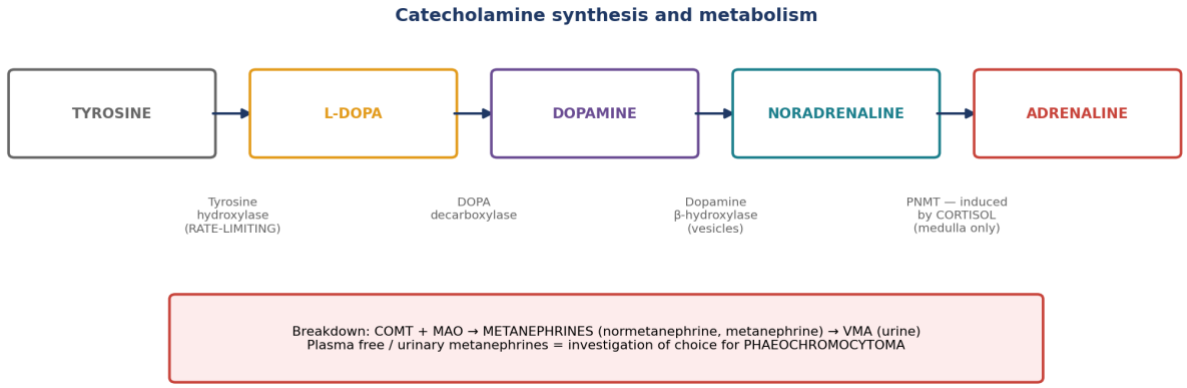


Figure 196.1 — Catecholamine synthesis and metabolism

196.2 Presentation and differential diagnosis

Feature	Phaeochromocytoma	Pre-eclampsia
Timing	Any gestation; hypertension < 20 weeks	After 20 weeks
BP pattern	Paroxysmal, labile; postural hypotension	Sustained
Symptoms	Headache, palpitations, sweating, pallor, anxiety, tremor	Headache, visual disturbance, epigastric pain
Proteinuria / oedema	Usually absent	Present
Other	Hyperglycaemia, arrhythmia, cardiomyopathy; crises with supine position, contractions, labour, anaesthesia, drugs	Thrombocytopenia, ↑ ALT, ↑ urate, ↓ PlGF

■ RED FLAGS

- **Drugs that can precipitate a crisis**: **metoclopramide**, glucocorticoids (e.g. betamethasone — use with α-blockade in place), β-blockers without α-blockade, glucagon, opioids that release histamine, tricyclics, sympathomimetics (ephedrine), suxamethonium (fasciculation-induced abdominal pressure).

196.3 Diagnosis

- **Plasma free metanephrines** or **24-h urinary fractionated metanephrines** (unaffected by pregnancy); methyldopa and labetalol may interfere with some assays.
- **MRI** (no gadolinium) for localisation; **MIBG and PET are contraindicated** in pregnancy.
- Genetic testing (**MEN2** — medullary thyroid cancer, **VHL**, **NF1**, **SDH** mutations) — affects family screening.

196.4 Management

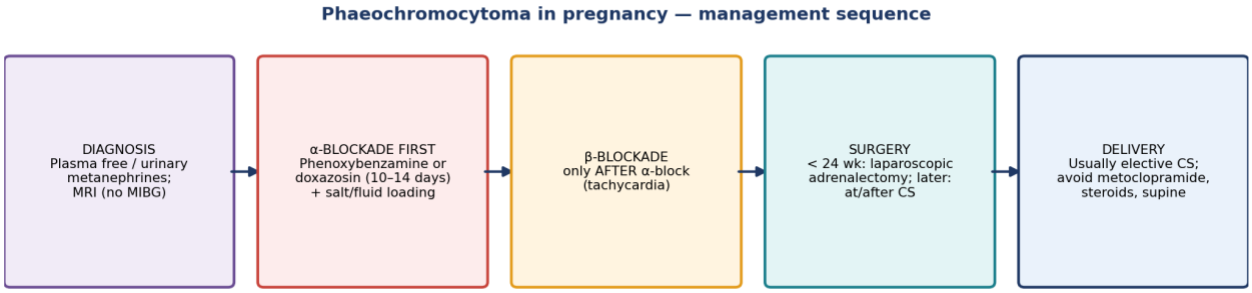


Figure 196.2 — Management sequence

Element	Detail
α-blockade	Phenoxybenzamine (non-selective, irreversible — crosses placenta: neonatal hypotension/respiratory depression) or doxazosin (selective); ≈ 10–14 days; liberal salt and fluids to re-expand volume
β-blockade	Only after adequate α-blockade, for tachycardia (unopposed α → hypertensive crisis if β first)
Acute crisis	IV phentolamine, magnesium sulphate, nicardipine/nitroprusside; avoid hydralazine-induced tachycardia without β-blockade
Surgery	Laparoscopic adrenalectomy before 24 weeks; later in pregnancy — combined with or after caesarean section
Delivery	Usually elective CS (labour/Valsalva/contractions provoke crises); multidisciplinary anaesthesia with arterial line; avoid metoclopramide
After removal	Watch for hypotension (vasodilatation, volume) and hypoglycaemia (rebound insulin)

196.5 Must-know summary

■ EXAM TIP

- Paroxysmal hypertension < 20 wk + headache, sweating, palpitations, postural hypotension → think phaeo, not pre-eclampsia.
- **Metanephrines** (plasma or urine); MRI — **no MIBG**; genetic testing.
- **α-blocker first (10–14 days), then β-blocker**; salt/fluid loading.
- Surgery < 24 wk; later at/after **CS**; avoid **metoclopramide** and unopposed β-blockade.

■ MNEMONIC / MEMORY AID

Phaeo symptoms — '5 Ps': Pressure (BP), Pain (headache), Perspiration, Palpitations, Pallor.