

CLINICAL CASE STUDY for PHAECHROMOCYTOMA: PERIOPERATIVE MANAGEMENT, ATOTW 151

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Prabodh Sasidharan, SpR, Aberdeen Royal Infirmary
Ian Johnston, Consultant, Raigmore Hospital, Inverness

Correspondence to prabodhsasidharan@gmail.com



CLINICAL CASE STUDY

A 50 year old apparently healthy man undergoes a cystoscopy under spinal anaesthetic for haematuria and non specific bladder symptoms. Introduction of the cystoscope and distension of the bladder are followed by severe hypertension and a tachycardia. The patient becomes pale and sweaty and complains of chest discomfort. ECG on the monitor shows ST changes.

What is the differential diagnosis?

Bladder phaeochromocytoma is a possibility. Review history of symptoms of crisis during voiding of urine. Review blood pressure readings. No quick test can confirm the diagnosis. Consider thyrotoxicosis, malignant hypertension, malignant carcinoid syndrome.

How would you proceed?

Stop the procedure. Administer O₂ by facemask, treat the blood pressure surge with arterial dilators such as SNP, phentolamine or GTN. Beta blockers can precipitate cardiac failure by reducing cardiac contractility in combination with an unopposed vasoconstriction. Postpone surgery for further investigations to confirm clinical suspicion.

What is phaeochromocytoma and how do you diagnosis this in laboratory?

Most centres diagnose phaeochromocytomas by testing urine for free catecholamines and their metabolites and/or measuring plasma catecholamines

What is the pathophysiology of phaeochromocytoma?

Persistent α stimulation due to catecholamine excess leads to hypertension and contracted vascular volume and myocardial dysfunction accompanies a long standing increase in after load. CVS and CNS complications arise due to hypertension.

What agents are useful in controlling effects of circulating catecholamines?

α adrenergic blockers: selective and non selective \pm beta blockers.

Why should α blockade be established before adding β blockers?

β 2 mediated vasodilatation is blocked by β blockers and this leads to an unopposed α mediated vasoconstriction and worsening of hypertension. β blockers hamper the contractility of the heart which has to deal with an already excessive after-load leading to cardiac failure. This is especially true in patients with a catecholamine induced cardiomyopathy.

What anaesthetic drugs would you avoid?

Any drug that stimulates sympathetic nervous system (ketamine). Any drug which releases histamine (morphine, atracurium) or releases catecholamines from nerve endings (ephedrine, pethidine)

What are the pharmacological options to control intraoperative surges in blood pressure?

Intravenous α blockers \pm β blockers, SNP, NTG, magnesium sulphate, nicardipine

What are the crucial stages in theatre?

Intubation, dissection and tumour manipulation, clamping of the venous drainage of the tumour

What are the indicators of optimal adrenergic blockade prior to surgery?

Consistent BP readings below 160/90, presence of postural hypotension, normalisation of ECG, nasal congestion.