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Anesthetic Preparation and Management of Pheochromocytoma during Elective Adrenalectomy for Resection of Tumor

Pheochromocytoma is a rare neuroendocrine composed of chromaffin cells of the adrenal medulla. This class of tumor is clinically significant because of its ability to secrete catecholamines and cause a wide range of debilitating symptoms including the classic symptoms of episodic headaches, hypertension, palpitations, and diaphoresis. Treatment of pheochromocytoma classically involves surgical resection of the tumor usually via adrenalectomy. A successful resection of pheochromocytoma involves extensive preoperative preparation with prophylactic adrenergic blockade. Perioperative anesthetic management is specially focused on counteracting catecholamine surges during tumor manipulation and the resulting hypertension and tachycardia that may arise. Invasive monitoring including arterial blood pressure transduction is essential in order to closely monitor for signs of hypertensive crisis. Certain medications such as phentolamine, are employed during intraoperative management in order to guard against acute alpha adrenergic agonism from catecholamines. Vasodilating agents, traditionally reserved for cardiac surgery, such as nitroglycerin and nicardipine are also readily available in order to counteract a potential hypertensive crisis. Using a recent case of an open adrenalectomy as a guide, this presentation aims to highlight the essential aspects for the successful perioperative anesthetic management of pheochromocytoma resection. This case involved adequate preoperative alpha-adrenergic antagonism, extensive anesthetic preoperative preparation and a successful execution of an anesthetic plan which resulted in a smooth resection of tumor with no significant catecholamine surges resulting in uncontrolled sympathetic stimulation. As there was no unique anesthetic approach to this procedure, this case can further be used in compilation with other similar cases in order to potentially develop a standardized approach to managing this disease in the perioperative setting.