A case of carcinoid tumor

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A Case of Carcinoid Tumor
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INTRODUCTION
Resection of carcinoid tumors have significant implications for anesthetic management due to concern for intraoperative hemodynamic changes of hypotension or hypertension and bronchospasm. Octreotide has now become the mainstay of therapy for carcinoid tumor resection. Below we present a case of carcinoid tumor resection with the use of octreotide, in addition to other agents, to prevent and treat intraoperative complications.

CASE DESCRIPTION
A 58 year old male with asymptomatic carcinoid tumor of the bowel, diagnosed with positive octreotide scan, presented for resection of the tumor from the ileocecal junction. The patient was given steroids and histamine blockers prior to induction and an octreotide infusion was begun. The patient was induced and intubated and blood pressure was monitored perioperatively with radial arterial line. Hypotension with systolic blood pressures less than 80mmHg occurred with tumor manipulation and was successfully treated with octreotide and phenylephrine. At the case’s end, the octreotide infusion was discontinued and the patient was extubated and taken to PACU in stable condition.

DISCUSSION
Carcinoid Tumors
• Occur in only 0.2-10/100,000 people, incidental findings on autopsies show rates as high as 8%.1
• Develop from neuroendocrine cells and secrete a variety of neuropeptides and vasoactive substances, including: serotonin, bradykinin, vasoactive intestinal polypeptide, kallikrein, substance P and histamine.2
• 75% occur in the GI tract, location of origin correlates with the type of substance released. Signs and symptoms include flushing, diarrhea, bronchospasm, hypertension, hypotension and hyperglycemia.3

Intraoperative Management
• An arterial line should be placed to monitor significant hemodynamic changes caused by peptide release. These changes can be precipitated by anxiety and catecholamine release during induction. Peptide release can also be precipitated by hypercapnea, hypotension or hypothermia.3
• To ensure a smooth induction, avoid medications that cause the release of histamines. Certain non-depolarizing muscle relaxants, succinylcholine and morphine should be avoided to prevent precipitation of bronchospasm.
• Avoid beta and alpha adrenergic agonists as these can precipitate release of peptides.
• Today’s main line of prevention and treatment of symptoms from peptide release is octreotide, a synthetic somatostatin analog with a longer half life that prevents hormone release, blocks the actions of released peptides, and inhibits insulin secretion.1

Perioperatively
• Octreotide can be infused at a rate of 50-100mcg/hr, and boluses of 25-100mcg can be given2 for hypotension, hypertension and bronchospasm with effects seen in about 10 minutes.
• Circulating peptides can still cause symptoms even after tumor resection, and octreotide may need to be continued postoperatively.

REFERENCES

CONCLUSION
Octreotide infusion is the mainstay therapy for intraoperative prevention and management of hemodynamic instability and bronchospasm. Other agents such as antihistamines and steroids may also be used, while histamine-releasing agents and adrenergic agonists should be avoided.