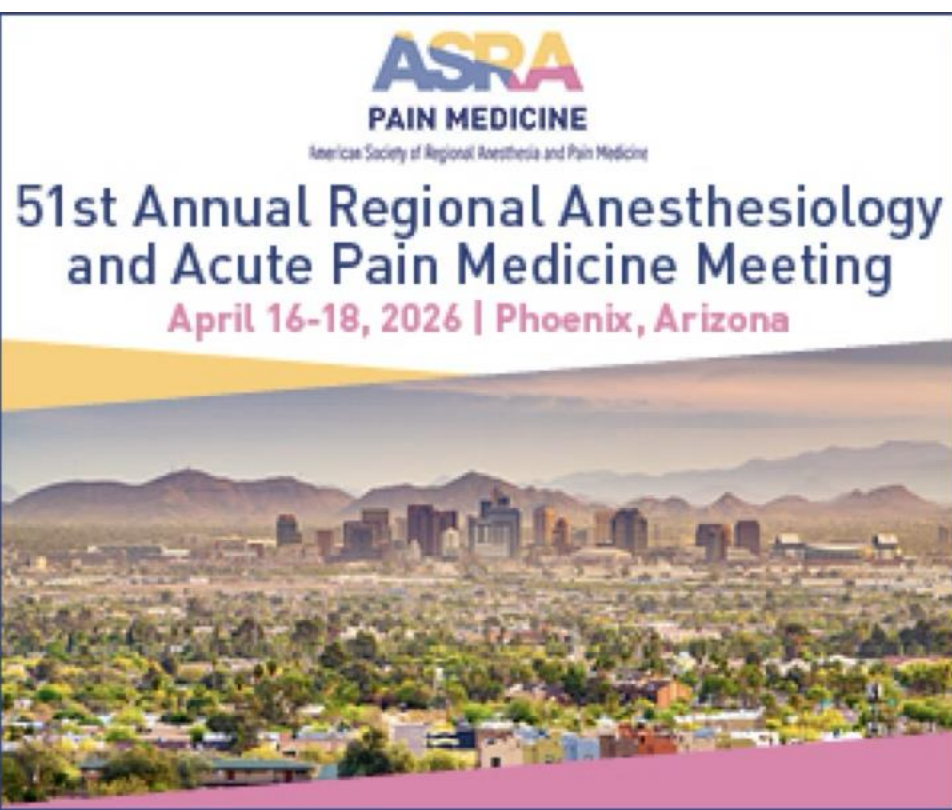




Smoothing the Surge: Single Dose Intraoperative IV Methadone for Analgesia During Laparoscopic Adrenalectomy for Pheochromocytoma

A Case Report

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Introduction

Laparoscopic adrenalectomies for pheochromocytoma demand strict analgesic control to minimize sympathetic stimulation and labile hemodynamics. Neuraxial, regional techniques and short-acting opioids are commonly employed.¹ However each carries limitations, including procedural stress, peaks and troughs of pain control, and hypotension. While often avoided due to hemodynamic and histamine concerns, this case demonstrates intravenous methadone as a suitable alternative for laparoscopic adrenalectomy providing the stable, prolonged analgesia essential for successful surgical outcomes in pheochromocytoma patients

Materials & Methods

Patient informed consent was obtained for this medically challenging case submission, and since no patient-identifiable information is included, HRRC review and approval by this organization is not required.

References

1.Komen H, Brunt LM, Deych E, Blood J, Kharasch ED. Intraoperative Methadone in Same-Day Ambulatory Surgery: A Randomized, Double-Blinded, Dose-Finding Pilot Study. Anesth Analg. 2019 Apr;128(4):802-810. doi: 10.1213/ANE.0000000000003464. PMID: 29847382; PMCID: PMC6995343.

2.Friesgaard KD, Brix LD, Kristensen CB, Rian O, Nikolajsen L. Clinical effectiveness and safety of intraoperative methadone in patients undergoing laparoscopic hysterectomy: a randomised, blinded clinical trial. BJA Open. 2023;7:100219. Published 2023 Aug 5. doi:10.1016/j.bjao.2023.100219

Description

- 30 year-old male with history of pheochromocytoma scheduled for laparoscopic adrenalectomy:
- Preoperative α and β blockade not fully titrated due to lightheadedness; patient had persistent hypertension and severe anxiety/panic symptoms.
 - Concomitant gallstone cholecystitis required urgent adrenalectomy to treat endocrine disease prior to biliary pathology.
 - Neuraxial analgesia considered but deferred due to procedural intolerance, anxiety-related catecholamine surges, and risk of postoperative hypotension.
 - Following induction of general anesthesia, 15 mg IV methadone (0.2 mg/kg) was administered with standard induction medications for sustained analgesia.
 - Intraoperative course uneventful; no additional IV opioids required, allowing hemodynamic changes to be managed with vasoactive medications.
 - Rapid emergence after tumor resection; patient monitored in ICU and weaned off vasopressors.
 - Postoperative pain scores 0–5 on postoperative days 1–2.
 - Total inpatient opioid use: 150 mcg fentanyl, 1 mg hydromorphone, and 30 mg oxycodone (divided doses).
 - No respiratory or hemodynamic complications; discharged postoperative day 3.

Discussion

- First reported case highlighting potential advantages of methadone in pheochromocytoma surgery.
- Long duration of action provides stable analgesia and avoids peaks and troughs.
- Reduces repeated opioid dosing in a hemodynamically labile population.
- Provides a smooth hemodynamic profile intraoperatively by reducing intraoperative sympathetic stimulation.
- May decrease postoperative opioid requirements.
- Despite theoretical histamine-mediated catecholamine release, literature and our findings suggest minimal clinical impact.