

Case Report: Opioid Sparing Anaesthesia with Dexmedetomidine in General Surgery

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Abstract : Perioperative pain is a complex mechanism activated by various nociceptive, neuropathic, and inflammatory pathways. Opioids have long been a mainstay for analgesia in this period, even as we are continuously moving towards a multimodal model to improve pain control while minimising side effects. Dexmedetomidine, a potent alpha-2 agonist, is a useful sedative and hypnotic agent. Its use in the intensive care unit has been well described, and it is increasingly an adjunct intraoperatively for its opioid sparing effects and to decrease pain scores. We describe a case of a general surgical patient in whom minimal opioids was required with dexmedetomidine use. The patient was a 61-year-old Indian gentleman with a history of hyperlipidaemia and type 2 diabetes mellitus, presenting with rectal adenocarcinoma detected on colonoscopy. He was scheduled for a robotic ultra-low anterior resection. The patient was induced with intravenous fentanyl 75mcg, propofol 160mg and atracurium 40mg. He was intubated conventionally and mechanically ventilated. Anaesthesia was maintained with inhalational desflurane and anaesthetic depth was measured with the Masimo EEG Sedline brain function monitor. An initial intravenous dexmedetomidine dose (bolus) of 1ug/kg for 10 minutes was given prior to anaesthetic induction and thereafter, an infusion of 0.2-0.4ug/kg/hr to the end of surgery. In addition, a bolus dose of intravenous lignocaine 1.5mg/kg followed by an infusion at 1mg/kg/hr throughout the surgery was administered. A total of 10mmol of magnesium sulphate and intravenous paracetamol 1000mg were also given for analgesia. There were no significant episodes of bradycardia or hypotension. A total of intravenous phenylephrine 650mcg was given throughout to maintain the patient's mean arterial pressure within 10-15mmHg of baseline. The surgical time lasted for 5 hours and 40minutes. Postoperatively the patient was reversed and extubated successfully. He was alert and comfortable and pain scores were minimal in the immediate post op period in the postoperative recovery unit. Time to first analgesia was 4 hours postoperatively - with paracetamol 1g administered. This was given at 6 hourly intervals strictly for 5 days post surgery, along with celecoxib 200mg BD as prescribed by the surgeon regardless of pain scores. Oral oxycodone was prescribed as a rescue analgesic for pain scores > 3/10, but the patient did not require any dose. Neither was there nausea or vomiting. The patient was discharged on postoperative day 5. This case has reinforced the use of dexmedetomidine as an adjunct in general surgery cases, highlighting its excellent opioid-sparing effects. In the entire patient's hospital stay, the only dose of opioid he received was 75mcg of fentanyl at the time of anaesthetic induction. The patient suffered no opioid adverse effects such as nausea, vomiting or postoperative ileus, and pain scores varied from 0-2/10. However, intravenous lignocaine infusion was also used in this instance, which would have helped improve pain scores. Paracetamol, lignocaine, and dexmedetomidine is thus an effective, opioid-sparing combination of multi-modal analgesia for major abdominal surgery cases.

Keywords : analgesia, dexmedetomidine, general surgery, opioid sparing

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