Erector Spinae Plane Block for Ivor Lewis Oesophagectomy: An Opioid-sparing Technique

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Background

Ivor Lewis oesophagectomy is a minimally invasive technique which requires abdominal and right thoracic dissection with an intra-thoracic anastomosis. Traditionally, the analgesic plan for these surgeries included IV paracetamol and IV opioids via patient-controlled analgesia (PCA) pumps. IV nsoids/cox-2 inhibitors have also been used occasionally but their use has been limited by concerns of bleeding and nephrotoxicity.

Poorly controlled pain in these patients can lead to respiratory complications, deconditioning secondary to inability to engage with physiotherapy and patient dissatisfaction. High opioid consumption is associated with increased incidence of ileus and more significant nausea and vomiting.

The use of erector spinae plane (ESP) block has been successfully described as an analgesic option for multi-level rib fractures and thoracic surgeries^{1,2}. We postulated that ESP can also potentially decrease the reliance on IV opioids for analgesia for Ivor Lewis oesophagectomy.

Results

	VAS (at rest)	VAS (dynamic)	PCA fentanyl usage (mcg)	Documented activity levels
POD 1	0	4	260	Able to take deep breaths and cough
POD 2	1	3	300	Incentive spirometry x10 (500-750ml); Sit over edge of bed; Sit to stand; Ambulated from bed to chair
POD 3	1	3	120	Ambulated 100m (pushing drip stand himself); Sat out of bed >50% of the day
POD 4	0	2	20	Ambulating independently

PCA was taken off on POD 4 while he received IV Paracetamol 1g Q6H until POD 7 after which it was converted to PO Paracetamol 1g Q6H/PRN. No opioids were required after POD 4.

Discussion

Bilateral ESP block can be done as part of a multimodal analgesic plan to avoid excessive opioid usage in Ivor Lewis oesophagectomy. It is a simple and relatively safe block which should be considered in patients especially in whom high dose opioids can be detrimental. However, a possible next step could be to evaluate the efficacy of continuous ESP block in a RCT to determine if there is any real clinical benefit.

References

1. Kot P, Rodriguez P, Granell M, et al. The erector spinae plane block: a narrative review. Korean J Anesthesiol. 2019;72(3):209–220. doi:10.4097/kja.d.19.00012

2. D. L. Hamilton, B. Manickam, Erector spinae plane block for pain relief in rib fractures, BJA: British Journal of Anaesthesia, Volume 118, Issue 3, March 2017, Pages 474–475

Case Report

We describe a case featuring the use of bilateral ESP blocks as an opioid sparing technique for an Ivor Lewis oesophagectomy in a 60-year-old gentleman with known hyperlipidaemia and oesophageal carcinoma.

Anaesthesia

Bilateral single-shot ESP block was done at T6 pre-operatively and 25ml boluses of Ropivacaine 0.3% with adrenaline 1:400k were given to each side respectively.

Induction was with IV propofol, lignocaine, fentanyl and atracurium. Anaesthesia was maintained with desflurane and a titrated IV remifentanyl infusion (total dose 1.24mg).

Surgical duration was 5.5hrs

Multi-modal analgesia

IV paracetamol 1g and IV morphine 10mg were given 30min to 1hr prior to extubation.

Post-operatively, he was prescribed IV paracetamol 1g Q6H and PCA fentanyl.