ULTRASOUND GUIDED PECTORAL NERVES (USG PECS) I AND II BLOCK VERSUS SURGEON ADMINISTERED LOCAL ANAESTHETIC IN BREAST SURGERY: RETROSPECTIVE CASE SERIES

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Background

Ultrasound guided PECS I and II blocks are relatively new interfascial plane blocks which are gaining popularity in breast surgery.

PECS I involves deposition of local anaesthetic between pectoralis major and minor muscles at the level of the third or fourth rib. With PECS II block, the local anaesthetic is deposited between pectoralis minor and serratus anterior muscles.¹

Reduction in acute post-operative pain is associated with higher levels of patient satisfaction, reduction in post-operative respiratory complications and reduced incidence of chronic pain.²

PECS blocks have been shown to reduce postoperative pain and opioid consumption compared to GA alone^{3,4} and when combined with continuous local anaesthetic (LA) infusion.⁵

Literature comparing PECS block to local anaesthetic wound infiltration is however limited. Our retrospective study compares USG PECS block versus surgeon administered LA wound infiltration (WI) in terms of postoperative analgesia, antiemetic usage, time spent in anaesthetic room and complications.

Methods

All patients undergoing wide local excision from 03/05/18 to 19/10/18 were included.

Data was collected retrospectively from anaesthetic charts and electronic prescriptions.

Primary outcomes were 24-hour postoperative analgesia consumption, antiemetic consumption and time spent in the anaesthetic room.

Results

Twenty-seven patients were included in our study.

All patients had wide local excision surgery.

Seven patients received USG PECS block and 20 patients received local anaesthetic wound infiltration by surgeons. Within the PECS group, 3 patients received PECS II, 3 patients received both PECS I&II and 1 patient received PECS I block (table 1). All USG PECS blocks were performed in the anaesthetic room post induction of general anaesthesia.

Both groups received similar total doses of LA

	Intra-operative		Post-operative within first 24 hours						
	Mean dose of LA (mg) (p=0.390)	Mean anaesthetic time (mins) (p = 0.889)	Mean cumulative paracetamol dose (mg) (p = 0.541)	Mean cumulative ibuprofen dose (mg) (p = 0.976)	Mean cumulative Tramadol dose (mg) (p = 0.522)	Mean cumulative Codeine dose (mg) (p = 1.000)	Mean IV morphine dose in recovery (mg) (p = 0.596)	Mean cumulative Oramorph dose (mg) (p = 0.976)	% patients requiring antiemetic (p = 0.426)
Ultrasound guided PECS Block (n = 7)	105 Median 100	11.1	142.9	0	21.4	17.1	1.3	0	28.6
Local Anaesthetic wound infiltration (n = 20)	94.75 Median 100	10.9	350	0	10	28.5	0	0	15.0

Discussion

Analgesia consumption in the first 24 hours post surgery was low in both groups with majority of patients taking simple analgesics including paracetamol and codeine. Only one patient required morphine post-op in the PECS group and no patients required morphine in the LA infiltration group. We found no statistically significant difference in analgesia usage in the first 24 hours post-surgery. Although we did not specifically investigate the effect of PECS block on intra-operative analgesia requirements, we found slightly higher percentage of patients requiring fentanyl and only one patient in the LA infiltration group required intra-op morphine versus no patients in the PECS block group. A higher percentage of patients required an antiemetic post-surgery in the PECS block group although not statistically significant. There was no significant difference in mean and median time spent in the anaesthetic room between the two groups. No clinically relevant adverse effects were reported in either group.

Our findings suggest local anaesthetic wound infiltration is potentially an effective, safe and cheaper alternative to PECS block, however our patient numbers are small. Further randomised controlled trial data is needed to compare the two techniques. Anecdotally, patients tend to complain of pain in the medial regions of their chest wall post PECS block when they have pain post-operatively, therefore further studies investigating the addition of transversus thoracic muscle plane block to increase coverage of anaesthesia to the internal mammary region as shown by Ueshima et al in their study would be highly anticipated.

We hypothesise that PECS block administered at the start of surgery with the addition of transversus thoracic muscle plane block is likely to reduce the surgical stress response and may confer longer term advantages including reduced cancer recurrence, however further study in this area is also needed.

References

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