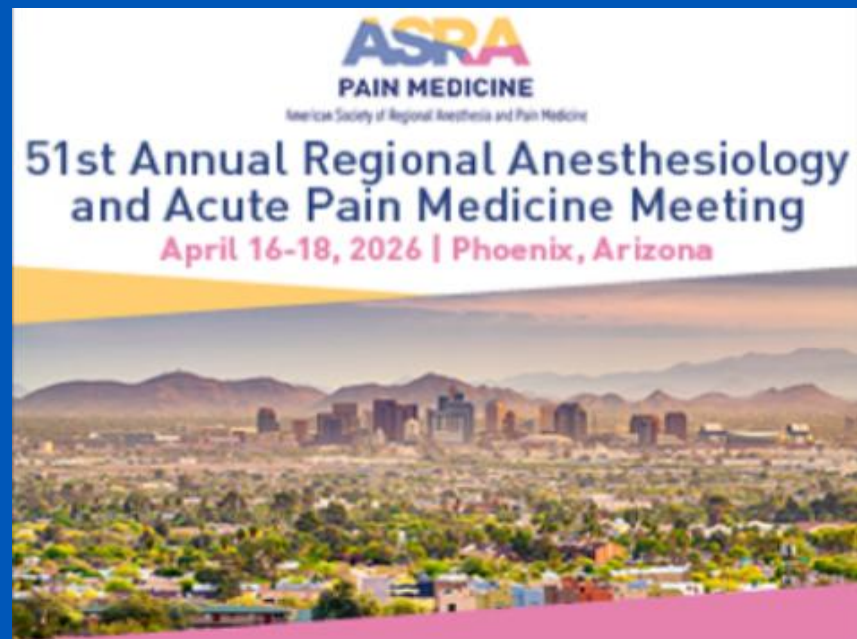




Paravertebral Block in Open Pancreatectomy Surgery: A Case Series Evaluating Pain, Opioid Use, and Recovery

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INTRODUCTION

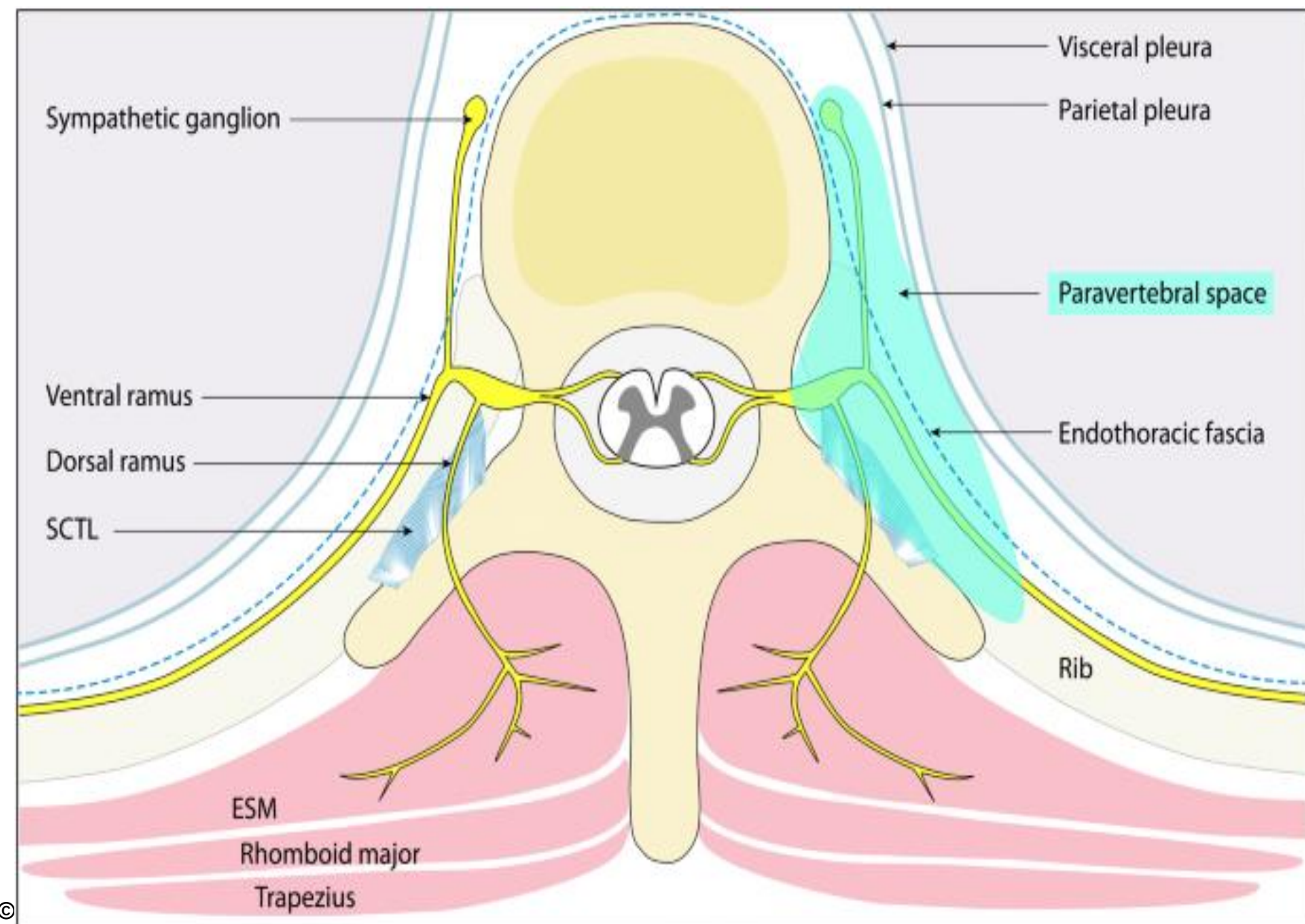
Open pancreatic resections cause significant postoperative pain, increasing opioid consumption, side effects, and hospital length of stay (LOS) (1).

One randomized trial demonstrated that paravertebral block (PVB) reduced intra- and postoperative opioids compared to sham procedures (2).

Systematic reviews comparing continuous thoracic PVB to epidurals showed similar outcomes (3).

Pooling continuous catheter and single-shot techniques limits evidence for single-shot PVB efficacy.

We hypothesized that PVB would reduce 24-hour postoperative pain, opioid consumption, and hospital length of stay.



METHODS

EMR data was collected from adult open pancreatectomy patients at Mayo Clinic Florida (MCF), **May–Dec 2025**.

No IRB review was required due to absence of patient identifiable information.

Primary outcomes: opioid consumption (MMEs) & postoperative pain scores (NRS) during the first 24 hours and hospital LOS.

Secondary outcomes: intraoperative opioid consumption, total opioid use from postoperative day (POD) 0 to 3, post anesthesia care unit (PACU) LOS, incidence of postoperative nausea/vomiting and urinary retention, time to first bowel movement/flatus, and pain scores stratified by PVB level(s).

Excluded: chronic opioid users or those receiving local anesthetic injections at the incision.

Analysis controlled perioperative multimodal analgesic use to minimize confounding.

Data was analyzed using SPSS.

RESULTS

This retrospective study compared outcomes between **patients who received a PVB (n=10) and those who did not (n=10) for open pancreatectomy surgery**.

Groups were demographically similar, with median ages of 71.5 and 74.5 years, respectively. All PVB patients received bilateral blocks, primarily at T7-T8/T8-T9 levels (60%).

Primary outcomes: no statistically significant differences observed between groups.

Pain scores at PACU arrival (2.7 vs 5.8, p=0.072) and at subsequent postoperative timepoints showed **trends favoring PVB group** but did not reach statistical significance. **Hospital LOS was similar** (7.1 vs 8.8 days, p=0.130).

Postoperative opioid consumption within 24 hours was lower in the PVB group (90.9 vs 107.1 MME), though not statistically significant (p=0.705).

Secondary outcomes: intraoperative opioid use (41.0 vs 43.0 MME, p=0.733) was comparable between groups.

Table 1. Patient Characteristics

Characteristic	PVB (n=10)	No PVB (n=10)
Sex, n (%)		
Female	3 (30%)	6 (60%)
Male	7 (70%)	4 (40%)
Age (years), median [IQR]	71.5 [61.0–79.0]	74.5 [66.0–76.0]
BMI (kg/m²), median [IQR]	27.9 [22.3–231.5]	25.9 [24.8–33.0]
ASA classification, n (%)		
I	0	0
II	1 (10%)	2 (20%)
III	9 (90%)	7 (70%)
IV	0	1 (10%)
PVB laterality, bilateral, n(%)	10 (100%)	–
PVB levels		
T7–T8, T8–T9, T9–T10	6 (60%)	–
T7–T8, T9–T10	1 (10%)	–
T8–T9, T9–T10, T10–T11	1 (10%)	–
T7–T8, T9–T10, T11–T12	1 (10%)	–
T6–T7, T8–T9	1 (10%)	–

Table 2. Study Outcomes

Characteristic	PVB (n=10)	No PVB (n=10)	P-value
Pain 0 hr postop (PACU), mean (SD)	2.7 (3.6)	5.8 (3.8)	0.072
Pain 1 hr postop, mean (SD)	4.6 (3.1)	6.7 (3.2)	0.128
Pain 12 hrs postop, mean (SD)	4.5 (1.5)	6.3 (1.3)	0.050
Pain 24 hrs postop, mean (SD)	4.9 (2.1)	5.4 (1.90)	0.491
Intraop opioids (MME), mean (SD)	41.0 (25.1)	43.0 (12.2)	0.733
POD 0 opioids, mean (SD)	90.9 (59.7)	107.1 (61.8)	0.705
POD 1 opioids, mean (SD)	165.8 (161.0)	101.3 (52.2)	0.384
PACU LOS (min), mean (SD)	137.4 (66.8)	109.2 (60.3)	0.345
Surgery duration (min), mean (SD)	262.3 (108.1)	287.9 (60.2)	0.151
Hospital LOS (days), mean (SD)	7.1 (3.2)	8.8 (3.7)	0.130

DISCUSSION

PVBs **showed trends toward improved analgesia within 24 hours**. Benefits diminished as blocks wore off, suggesting potential rebound effect.

Since opioid consumption remained comparable after POD1, **patients may benefit more from continuous catheter applications** (i.e. epidural analgesia or PVB catheters) especially for procedures with anticipated prolonged operative time.

Primary **study limitation** is small sample size (n=20), significantly limiting statistical power.



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REFERENCES

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