Comparison of erector spinae plane block and paravertebral block for breast surgery: a retrospective analysis

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Background and Aims

- ✓ Thoracic paravertebral block (PVB) is an established technique for perioperative pain management for breast surgery.
- ✓ Since PVB is technically challenging, it has not been widely used.
- ✓ Recently introduced erector spinae plane block (ESPB) requires less technical expertise and may be an alternative to PVB.
- ✓ The two blocks have not been fully compared.
- ✓ The present study retrospectively analyzed data saved in our registry to compare the two blocks in patients undergoing breast surgery.

Methods

- ✓ A retrospective study using regional anesthesia database in our department
- ✓ The data of patients undergoing breast surgery who received either PVB or ESPB under ultrasound guidance from June 2018 to June 2019.

Measurements

- ✓ The primary outcome: VAS pain scores at 12h after block
 - ✓ The secondary outcomes:
 - Scanning time, block performing time
 - Presence of sensory blockade
 - VAS pain scores for 24h
 - Postoperative use of fentanyl from PCA device
- ✦ No basal infusion with 0.5 mcg/kg on demand bolus/10 minutes lockout

Results

Patient flow diagram

Demographics

	PVB (n=33)	ESPB (n=33)	P-value
Age(yr)	56 ± 17	60 ± 13	0.245
Body Weight (kg)	54.1 ± 9.7	53.5 ± 11.5	0.800
Height (cm)	156.4 ± 8.3	154.1 ± 5.8	0.191
Gender, male/female	1/32	1/32	1.000
ASA PS, I/II/III	8/25/0	5/26/2	0.258
Op Side, right/left	15/18	12/21	0.617
Type of surgery:			0.687
- Bp + SLNB	10	13	
- Bt + SLNB	14	11	
- Bp or Bt + node clearance	9	9	
Surgical time (min)	136 ± 55	151 ± 60	0.278
Anesthetic time (min)	197 ± 56	213 ± 67	0.279
Intraoperative opioids used:			
- fentanyl (mcg)	247 ± 91	227 ± 63	0.276
- remifentanyl (mcg)	794 ± 440	1030 ± 558	0.061

Data were expressed as mean ± SD or number of patients.

Bp = partial resection. Bt = total resection.

SLNB = sentinel lymph node biopsy.

Scanning and performing time

	PVB (n=33)	ESPB (n=33)	P-value
Scanning time (sec)	171 ± 89	113 ± 89	0.011
Block performing time (sec)	369 ± 180	190 ± 97	<0.001

Data were expressed as mean ± SD.

Analgesic requirements and adverse events

	PVB (n=33)	ESPB (n=33)	P-value
Postoperative fentanyl consumption (mcg)	27(0-75)	47(0-106)	0.279
Nausea	7(21%)	8(24%)	1.000
Vomiting	5(15%)	2(6%)	0.427

Data were expressed as median (IQR) or number of patients (%).

Presence of sensory blockade

	PVB(n=33)	ESPB(n=33)	P value
15 min after block(n(%))	32(97%)	7(21%)	< 0.001
6 hours after block(n(%))	31(94%)	17(52%)	< 0.001

Conclusion

- ✓ The two blocks had different characteristics, but were similar in pain scores at 12 h after block.