

The Clavipectoral Fascial Plane Block: A Phrenic Sparing Non-Inferior Alternative To An Interscalene Block for Clavicular Surgery

Chelsea McKenzie, Bhargav Earla, Theresa Northern, Christopher Paul, Joel Feinstein, Hari Kalagara, Promil Kukreja

Introduction:

Clavicular innervation is complex

- Supplied by both cervical and brachial plexus

Superior Cervical Plexus Block (SCPB)

- Targets cutaneous sensory innervation overlying clavicle

Clavipectoral Block (CPB)

- Targets terminal ends of various brachial plexus nerves that pass between clavipectoral fascia and clavicle

Hypothesis:

- Combined regional approach with SCPB and CPB may provide optimal postoperative pain control for clavicular ORIF when compared with more traditional methods such as the interscalene block

Methodology:

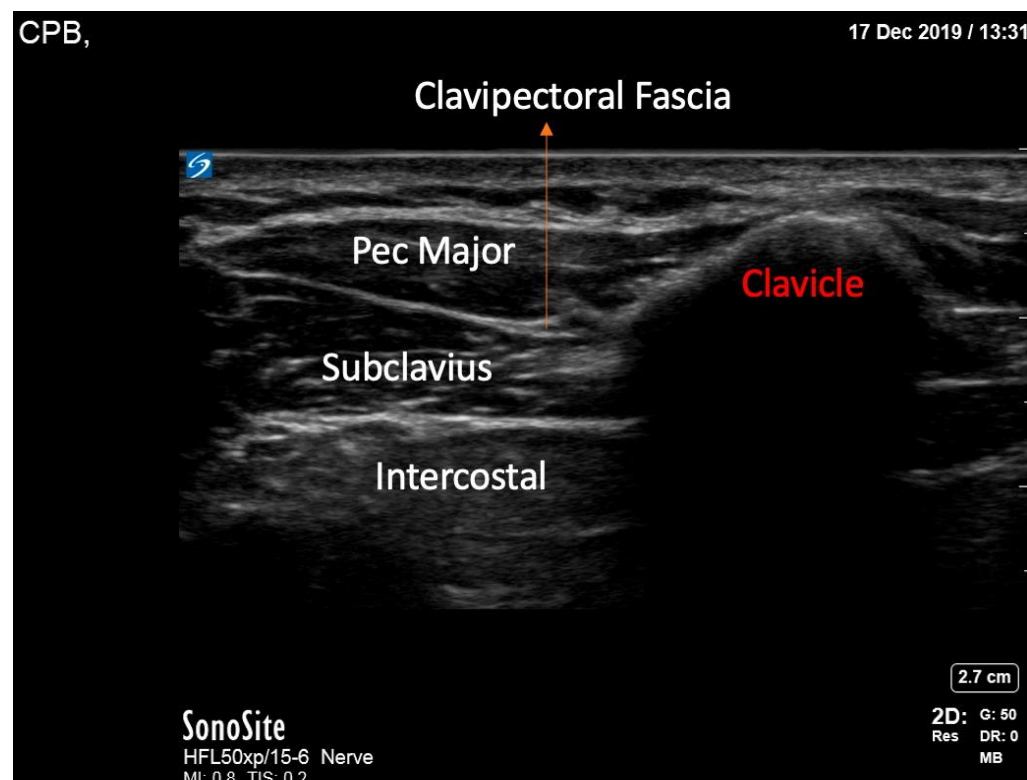
- Single Institute Retrospective Study
- Combined SCPB and CPB vs. interscalene vs. control (no block) for clavicular ORIF
- PACU pain scores and PACU and Intraoperative OME scores were obtained via chart review of the electronic medical record
- SCPB: 5 cc of 0.5% Ropivacaine
- CPB: 20 cc of 0.5% Ropivacaine
- 1-2mg Dexamethasone additive per injection

Results:

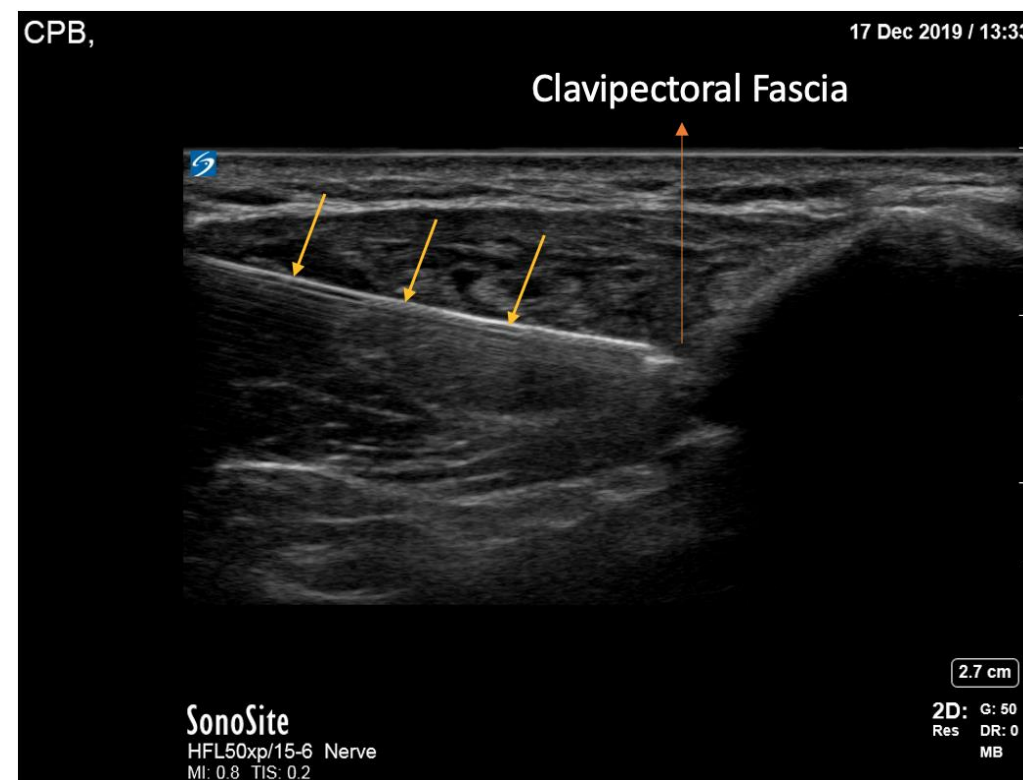
Variable	Interscalene (n = 36)	None (n = 18)	SCPB+CPB (n = 25)	P	Test
OME					
PACU, mean (SE)	33.79 (8.00)	37.50 (7.12)	26.50 (6.39)	0.575	ANOVA
OR, mean (SE)	19.44 (1.19)	38.06 (3.06)	22.00 (2.22)	< 0.001	ANOVA
PACU Pain Score					
First, mean (SE)	1.17 (0.47)	2.83 (0.92)	0.96 (0.53)	0.106	ANOVA
Last, mean (SE)	2.36 (0.47)	3.72 (0.50)	2.16 (0.58)	0.137	ANOVA
Min, mean (SE)	0.61 (0.27)	1.56 (0.54)	0.72 (0.43)	0.233	ANOVA
Max, mean (SE)	3.36 (0.64)	6.56 (0.69)	3.12 (0.70)	0.004	ANOVA
PACU Time, minutes					
Phase1, mean (SE)	66.00 (4.81)	64.33 (3.39)	57.08 (4.87)	0.375	ANOVA
Phase2, mean (SE)	33.86 (3.00)	25.28 (3.94)	31.44 (3.48)	0.243	ANOVA
Total, mean (SE)	99.86 (5.37)	89.61 (4.36)	88.52 (5.32)	0.230	ANOVA
PONV, N (%)	4 (11.11%)	2 (11.11%)	2 (8.00%)	0.913	Chi-sq

Conclusion:

- CPB combined with SCPB to be non-inferior to interscalene groups with regard to PACU scores and intraoperative OME requirements
- Findings clinically significant because the CPB combined approach is a phrenic nerve sparing technique and can be considered a safer option in patients with OSA, obesity, COPD, and other lung pathologies
- Larger prospective studies are required to further elucidate the efficacy, safety, and possibly the superiority of the combined CPB and SCPB approach



Ultrasound Image 1: CPB anatomical landmarks.



Ultrasound Image 2: In-plane technique for CPB.