

Brachial Plexus Nerve Blocks for Clavicular Surgery

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Introduction

- Clavicular ORIF can lead to significant post-operative pain
- Regional techniques over time have grown to provide more analgesia
- This study aims to investigate how brachial plexus, with cervical plexus blocks, affect opioid consumption, PONV, and recovery rates
- Retrospective chart review of block vs no block for patient's receiving GA

Methods

- From 1/1/23- 12/1/25: 162 cases after excluding ASA IV, emergency cases, concurrent procedures, or those with pre-op diagnosis of COPD
- Block group received either an interscalene/superior trunk/supraclavicular block with cervical plexus block
- Paired T-test for continuous and Chi-squared for categorical variables
- Primary outcomes: intra-op opioid requirements, post-op pain scores, PACU opioid consumption
- Secondary outcomes: PACU antiemetic use, PACU LOS, hospital LOS

Results

Demographics

Characteristic	No Block (N=76)	Block (N=86)	p-value
Age (years)	43.6 (16.6)	39.8 (14.6)	0.13
Sex			0.30
Female	21 (28%)	17 (20%)	
Male	55 (72%)	69 (80%)	
BMI	24.5 (3.3)	24.9 (3.7)	0.50
Surgical Duration (min)	172 (50)	164 (46)	0.30
General Anesthesia (GA)	76 (100%)	85 (99%)	>0.90
ASA Class			0.70
I	22 (29%)	27 (31%)	
II	45 (59%)	52 (60%)	
III	9 (12%)	7 (8.1%)	
Insurance			0.14
Medicaid	8 (11%)	3 (3.5%)	
Medicare	8 (11%)	6 (7.0%)	
Other	2 (2.6%)	2 (2.3%)	
Private / Commercial	56 (74%)	75 (87%)	
Self-pay / Uninsured	2 (2.6%)	0 (0%)	

Results

Characteristic	No Block (N=76)	Block (N=86)	p-value
Intraop MME	30.20 (13.61)	14.27 (10.27)	<0.001
PACU 1st Pain Score	4.43 (3.50)	0.72 (1.99)	<0.001
PACU MME 60 min	11.45 (9.11)	2.12 (5.33)	<0.001
PACU MME 120 min	2.90 (4.28)	0.94 (2.52)	<0.001
PACU MME PO	10.10 (7.60)	3.05 (4.80)	<0.001
PACU MME Total	24.86 (17.21)	6.65 (11.50)	<0.001
PACU PONV Rescue			<0.001
0	59 (77.63%)	82 (95.35%)	
1	17 (22.37%)	2 (2.33%)	
2	0 (0.00%)	2 (2.33%)	
PACU LOS (min)	198.13 (108.74)	142.67 (62.83)	0.001
Hospital LOS (hr)	12.71 (17.69)	9.52 (8.67)	<0.001

Conclusion

- Intra-op opioid requirements (MME) was reduced in block group (30.20 vs 14.27) (P<0.001)
- 1st Post-op pain scores lower in block group (4.23 vs 0.72) (P<0.001)
- Reduced opioid requirements (MME) among block group at 60mins (11.45 vs 2.12) and 120mins (2.90 vs 0.94) (P<0.001)
- Reduced Total PACU MMEs in block group (24.84 vs 6.65)(P<0.001)
- Secondary outcomes: Less frequent PACU antiemetic dosing, decreased PACU LOS and reduced hospital LOS

Discussion

- The block group required fewer intra-op and post-op opioids compared to no block group
- The brachial plexus group required less rescue antiemetics in PACU
- Block patients experienced shorter PACU recovery times and shorter hospital LOS
- Overall, the block group demonstrated clinically improved perioperative outcomes compared to the no block group
- Further research to investigate outcomes between specific brachial plexus blocks, long term pain outcomes, hospital cost analysis