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Adding an Erector Spinae Plane Catheter Block After An Interscalene Nerve Block Significantly Improves Pain Relief and Decreases Opioid Use Following Arthroscopic Rotator Cuff Repair

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Faculty Disclosure Information

- Nothing to disclosure



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Background

- Although arthroscopic rotator cuff repair (RCR) results in only small incisions, its acute postoperative pain forces 85% of surgeons to include morphine in pain management regimens.
- Side effects of opioids include postoperative nausea and vomiting, urinary retention, dizziness, constipation, sedation, and hypotension
- The use of opioids may decrease patient satisfaction.



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Background (Cont'd)

- Several studies have explored pain relief methods after rotator cuff surgeries, focusing on various regional nerve blocks, including interscalene nerve block (ISNB).
- The erector spinae plane (ESP) block is a newer method that takes 5 to 10 minutes to administer and has shown effectiveness in shoulder surgeries with minimal complications.

Purpose

- We aimed to evaluate whether additional catheterization for the ESP block decreases acute postoperative pain and opioid consumption in patients undergoing arthroscopic RCR when ISNB and multimodal oral analgesics have already been given.



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Methods

Inclusion Criteria

- Patients who underwent primary arthroscopic RCR between January 1 and December 31, 2021
- Received either ISNB (ISNB group) or additional ESP block catheterization (ESP block group)

Exclusion Criteria

- Patients who underwent concomitant shoulder procedures



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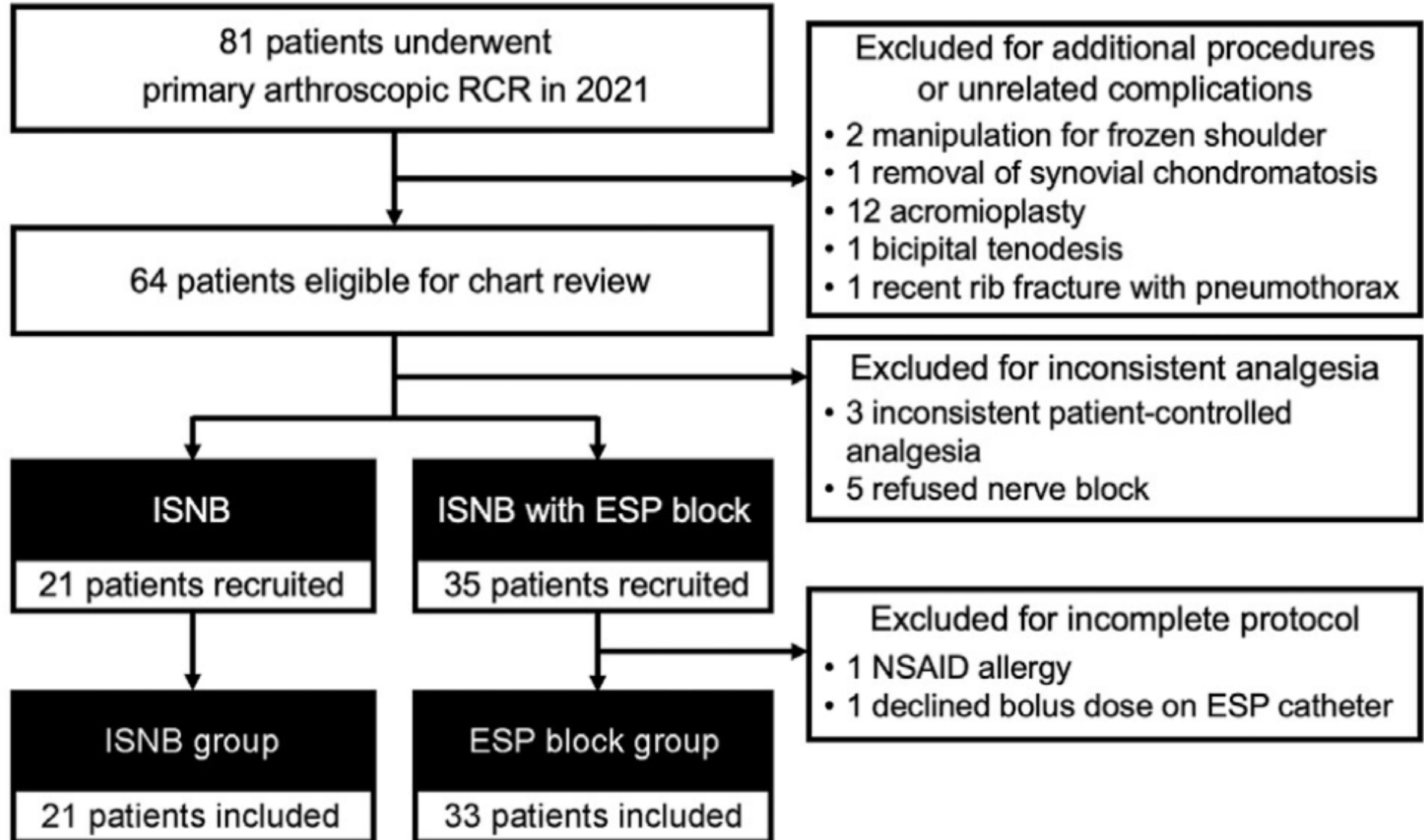
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Methods (Cont'd)

	ISNB Protocol	ESP Block Protocol
Preop	The night before surgery: Celecoxib 200 mg PO	2 hours before surgery: Pregabalin 75 mg PO, celecoxib 200 mg PO, lansoprazole 30 mg PO
Intraop	<ul style="list-style-type: none"> • ISNB before surgery (2% lidocaine 10 mL and 0.5% bupivacaine 10 mL) • Dexamethasone 1 g IVD 	<ul style="list-style-type: none"> • ISNB before surgery (2% lidocaine 10 mL and 0.5% bupivacaine 10 mL) • Dexamethasone 1 g IVD • Acetamol 1 g IVD • Granisetron 0.02 mg/kg • C7 ESP catheterization after surgery
Postop	<ul style="list-style-type: none"> • Acetaminophen 500 mg PO QID • Celecoxib 200 mg PO Q12H • Hydrocortisone 100 mg IVD Q12H • Morphine 3-5 mg IVD PRN 	<ul style="list-style-type: none"> • Acetaminophen 500 mg PO QID • Celecoxib 200 mg PO Q12H • Pregabalin 75 mg PO HS • Hydrocortisone 100 mg IVD Q12H • C7 ESP nerve block (2% lidocaine 10 mL and 0.5% bupivacaine 10 mL Q12H) • Morphine 3-5 mg IVD PRN



Results



Results (Cont'd)

	(n = 21)	(n = 33)	
Age, y	60.9 ± 11	60.6 ± 8	.551
Sex, male/female, No.	10/11	13/22	.329
BMI, kg/m ²	25.8 ± 2.6	24.9 ± 4	.147
Preop NPRS score	1.3 ± 0.9	1.2 ± 0.9	.536
No. of torn tendons	2.3 ± 0.7	2.1 ± 0.7	.348
No. of repaired tendons	2 ± 0.8	1.8 ± 0.8	.369
No. of anchors used	3.7 ± 1.6	4 ± 1.5	.586
Surgery time, min	130.8 ± 28	127.6 ± 36	.762



Results (Cont'd)

	ISNB Group (n = 21)	ESP Block Group (n = 33)	<i>P</i>
Postop NPRS score	3 ± 1.6	2 ± 0.3	.003
Opioid consumption, MME	6.1 ± 8.3	0.5 ± 1.3	<.001
Opioid-related complications, n	3	0	.022

a Data are expressed as mean ± SD. Bold *P* values indicate statistically significant differences between groups (*P* < .05). ESP, erector spinae plane; ISNB, interscalene nerve block; NPRS, numerical pain rating scale; MME, morphine milligram equivalent.

Results (Cont'd)

Multiple linear regression analysis			
	β	Standard Error	<i>P</i>
Age	0.108	0.085	.210
Sex	0.902	1.480	.545
BMI	0.345	0.198	.088
Analgesia	5.750	1.417	< .001 ^a
Anchor number	1.609	0.452	.022 ^a
^a BMI, body mass index. ^a <i>P</i> < .05 was considered statistically significant.			

Conclusions

- The study findings indicated that additional catheterization for the ESP block reduced postoperative pain, opioid consumption, and opioid-related side effects during the acute postoperative period of arthroscopic RCR when the ISNB and multimodal oral analgesics had already been administered.
- Future studies are needed to evaluate this treatment protocol.



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