

Effect of Erector Spinae Block with Bupivacaine and Ketamine vs. Bupivacaine Alone on Acute Postoperative Pain and Opioid Consumption in Patients Undergoing Modified Radical Mastectomy



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Introduction

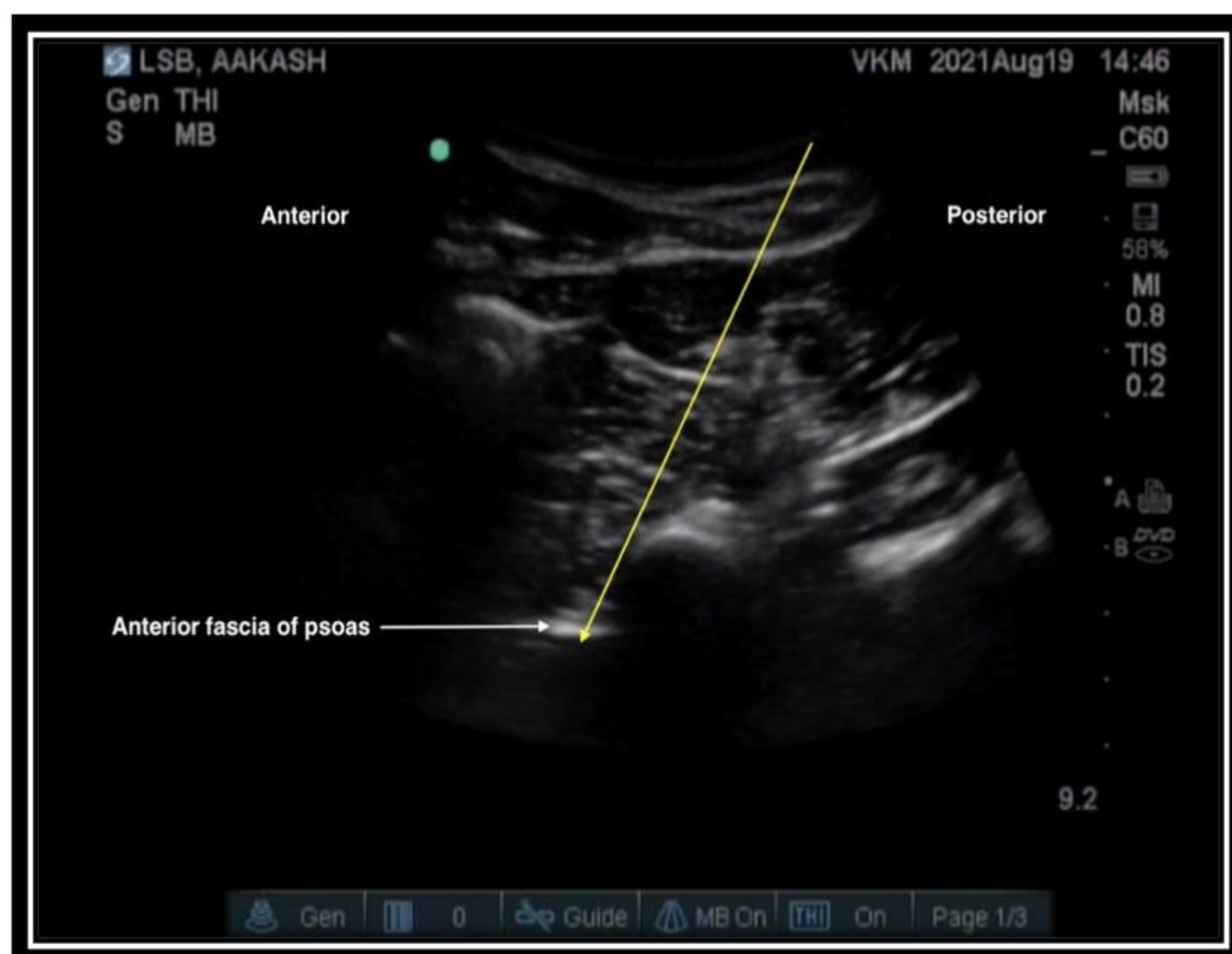
Modified radical mastectomy (MRM) involves extensive surgery that commonly results in acute postoperative pain, best managed with multimodal analgesia. The potential analgesic advantage of combining ketamine with bupivacaine in erector spinae plane block (ESPB) was evaluated.

Aim of the study

Primary outcomes included numerical rating scale (NRS) scores 1,2,4,8,12,24,48,72 hours after surgery, and secondary outcomes assessed opioid use, time to mobilization, postoperative neuropathic pain (DN4 questionnaire), and adverse effects.

Methods

Fifty ASA I-III patients undergoing MRM were randomized into two groups: Group A received ESPB with 30 ml of 0.25% bupivacaine, and Group B received ESPB with 30 ml of 0.25% bupivacaine plus ketamine (1 mg/kg).



Results

No significant difference was seen in NRS at 1 hour (p value=0.697), at 2 hours (p value=0.069), at 4 hours (p value=0.415), at 8 hours (p value=0.217), at 12 hours (p value=0.054), at 24 hours (p value=0.452) between group A and B. Cumulative fentanyl consumption, DN4 scores, time to PCA activation, or adverse effects between the groups (p > 0.05).

NRS	Group A(n=25)	Group B(n=25)	Total	P value
At 1 hour				
Mean ± SD	1.52 ± 2.04	1.92 ± 2.5	1.72 ± 2.27	0.697 [‡]
Median(25th-75th percentile)	0(0-2)	0(0-4)	0(0-2.75)	
Range	0-6	0-8	0-8	
At 2 hours				
Mean ± SD	1.68 ± 2.29	2.88 ± 2.57	2.28 ± 2.48	0.069 [‡]
Median(25th-75th percentile)	0(0-2)	2(0-4)	2(0-4)	
Range	0-6	0-8	0-8	
At 4 hours				
Mean ± SD	2.2 ± 2.42	2.44 ± 1.8	2.32 ± 2.11	0.415 [‡]
Median(25th-75th percentile)	2(0-4)	2(1-4)	2(0-4)	
Range	0-8	0-6	0-8	
At 8 hours				
Mean ± SD	1.36 ± 1.5	2.08 ± 2.04	1.72 ± 1.81	0.217 [‡]
Median(25th-75th percentile)	2(0-2)	2(0-4)	2(0-2)	
Range	0-4	0-8	0-8	
At 12 hours				
Mean ± SD	0.36 ± 0.95	1.12 ± 1.72	0.74 ± 1.43	0.054 [‡]
Median(25th-75th percentile)	0(0-0)	0(0-2)	0(0-1)	
Range	0-4	0-6	0-6	
At 24 hours				
Mean ± SD	0.24 ± 0.6	0.4 ± 0.76	0.32 ± 0.68	0.452 [‡]
Median(25th-75th percentile)	0(0-0)	0(0-0)	0(0-0)	
Range	0-2	0-2	0-2	

Conclusion

The addition of ketamine to bupivacaine in ESPB provided no significant benefit for postoperative pain or opioid consumption.

References

1. Abdella AMMR, Arida EEAEM, Megahed NA, El-Amrawy WZ, Mohamed WMA. Analgesia and spread of erector spinae plane block in breast cancer surgeries: a randomized controlled trial. BMC Anesthesiol. 2022 Oct 17;22(1):321.
2. ElHawary H, Abdelhamid K, Meng F, Janis JE. Erector Spinae Plane Block Decreases Pain and Opioid Consumption in Breast Surgery: Systematic Review. Plast Reconstr Surg Glob Open. 2019 Nov 20;7(11):e2525.
3. surgery: a randomized controlled trial. J Anesth. 2021 Feb;35(1):27-34.

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