LAPAROSCOPIC GUIDED PERI-WOUND TRANSVERSUS ABDOMINIS PLANE BLOCK COMPARING TO LOCAL WOUND INFILTRATION ON POSTOPERATIVE OPIOID USAGE IN LAPAROSCOPIC SLEEVE GASTRECTOMY, A DOUBLE BLIND RANDOMIZED CONTROLLED STUDY

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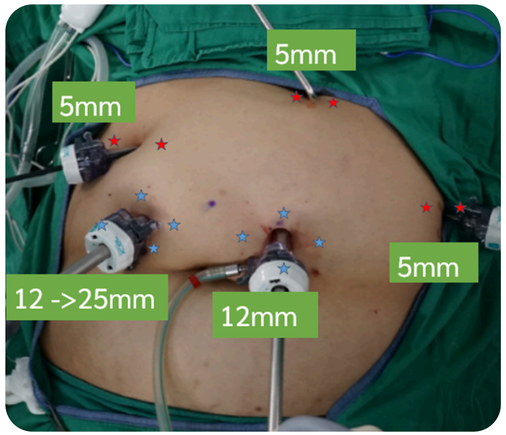
Introduction

Transversus abdominis plane (TAP) block has shown great potential usefulness in managing postoperative pain. TAP block involves the injection of local anesthetic into the fascial plane between the internal oblique and transversus abdominis muscles, which blocks the sensory nerves supplying the anterior abdominal wall. Conventional TAP block takes time as it needs to prepare the operative field to the lateral abdominal and the block was far from the incision site resulting in a higher chance of missed or excessive dermatome blockage. We developed a novel technique that can be as convenient as local wound infiltration but has a higher efficacy, called the peri-wound TAP block. We administered the transversus abdominis plane just around the wound for more convenient and more accurate administration.

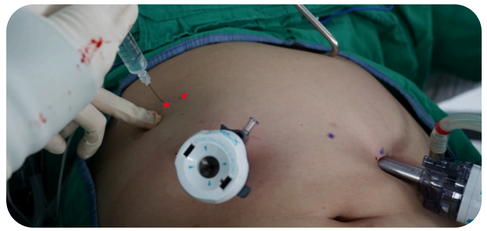
Method

This prospective, randomized, double-blinded study was performed by the Division of Minimally invasive Surgery at Srinagarind Hospital between June 2023 and February 2024. 92 patient were included , 46 in peri-wound TAP block group(intervention group) and 46 in local wound infiltration group. Intra-operatively, the coordinating personnel contacted the surgeon about the group assignment. The patient, the researcher, and the ward nurses oversaw the postoperative pain evaluation and opioids given to each patient were not aware of the allocation group.

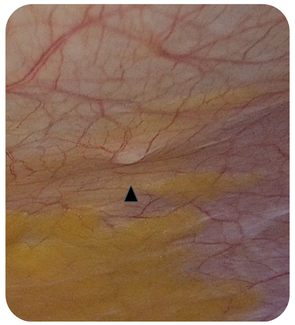
Peri-wound TAP block

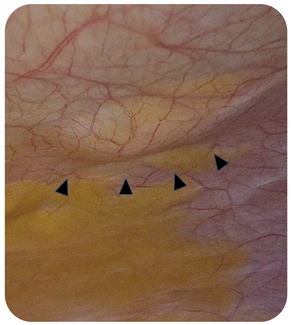


22G spinal needle inserted into the plane between the internal oblique and the transversus abdominis muscles. The injection was performed at 4 quadrants around the 12-mm wound with 2.1ml in each injection and 2 quadrants around the 5-mm wound with 1ml in each injection



The laparoscopic guidance consists in the insertion of the needle until the tip protrudes on the peritoneal layer, without traversing it. Then, the needle was retracted 3 mm into the abdominal wall, which is the estimated thickness of the preperitoneal space and the transversus abdominis muscle. The injection of the anesthetic drug into this space induces the formation of a bulge, observed as a mild protrusion in the abdominal wall towards the peritoneum. The mild protrusion indicates that the drug has been injected into the preperitoneal space.





Result

Variable	TAP Block (N=46)	Local wound (N=46)	Mean difference	95%CI; P value
Cumulative fentanyl usage over 48hr	92.7	133	40.3	1.79-78.86; P=0.04
Post op VAS 1hr	4.59	5.41	0.82	-0.28-1.94; P=0.14
Post op VAS 4hr	2.35	3.37	1.02	0.09-1.96; P=0.03
Post op VAS 8hr	2.26	1.96	0.30	-1.21-0.60; P=0.51
Post op VAS 12hr	1.57	2.04	0.47	-0.34-1.29; P=0.24
Post op VAS 24hr	1.72	1.93	0.21	-0.47-0.91; P=0.53
Post op VAS 48hr	0.87	0.91	0.04	-0.49-0.58; P=0.87
Operative time	94.3	107.5	13.2	0.68-25.74; P=0.04
Length of hospital stay	3.15	3.87	0.73	-0.45-1.93; P=0.23
Time to ambulation	20.69	29.58	8.89	4.96-12.81; P<0.01

Conclusion

Laparoscopic-guided peri-wound TAP block can reduce the postoperative fentanyl usage with mean difference of 40.3mcg. The postoperative pain at 4hr after surgery was also significantly lower in peri-wound TAP block, 2.4 vs 3.4 in local wound infiltration group, mean difference of 1.0. The mean time to ambulate was also significantly lower, 20.7hr vs 29.6hr, mean difference 8.9hr. Without increasing the operation time. The postoperative pain at 1, 8, 12, 24, 48, length of hospital stays, and wound infection rate were not statistically different between groups.