

Introduction

Laparoscopic sleeve gastrectomy (LSG) is the most commonly performed bariatric surgery performed in North America. As our knowledge of the importance in limiting narcotic use in postoperative patients increases, we sought to evaluate the effect of transversus abdominis plan blocks (TAP) on inpatient narcotic use in patients undergoing LSG

Methods

A retrospective review of LSG performed at a single institution by three bariatric surgeons was performed. All cases over a fifteen-month period were included and anesthesia records were reviewed to stratify patients those that received a TAP block and those that did not. Demographic, as well a surgical outcomes were collected for all patients. Narcotic utilization, as reported in morphine equivalents (ME), was evaluated between the two groups

Results

Table 1. Patient Demographics

Variable	
Sex (n, %)	
Female	307 (80)
Male	77 (20)
Age	45.89 (11.54)
BMI (avg, SD)	47.56 (8.33)
OR Time (minutes avg, range)	90.98 (59-242)
Morphine Equivalents (avg, range)	
Hospital Day 1	60.41 (0-160)
Hospital Day 2	21.70 (0-120)
Total	86.01 (0-244)
Length of Stay (days avg, range)	1.3 (1-9)
30 Day ER Visits (n, %)	35 (9.11)
30 Day Readmission	14 (3.65)

Table 2. TAP Block Demographics

	No TAP (n= 347)	TAP (n=37)	p-value
Age (mean, SD)	45.1 (11.5)	53 (12.8)	0.0001
Gender (Male)	65 (18.73%)	12 (32.43%)	0.0479
BMI (mean, SD)	47.4 (8.3)	49.1 (8.7)	0.2292
CCI (mean, range)	1.06 (0-7)	1.62 (0-6)	0.0518

Table 3. Multiple Linear Regression on Total Morphine Equivalents During Hospital Stay

Variable	Regression Coefficient	p-value
Age	-0.35968	0.0967
Sex (Male)	6.49788	0.1740
CCI	-0.43793	0.8269
TAP Block Use	-29.8163	<0.0001
ORT	0.27936	0.0072
Pain Score: PACU	1.97687	0.0032
Pain Score: One hour post op	3.21634	0.0004
Pain Score: Morning after surgery	6.66811	<0.0001

Average total hospitalization narcotic utilization in patients with TAP blocks was 49 ME (IQR 14.5-89) to 83 ME (IQR 58.5-110) in the no TAP group (p<0.0001). After controlling for multiple demographic and patient related cofactors, multiple linear regression analysis demonstrated TAP block patients utilized 29.8 ME less than the no TAP group (p<0.0001)

Table 4. Patient Outcomes.

	No TAP (n= 347)	TAP (n=37)	p-value
Surgical Outcomes			
ORT (minutes avg, IQR)	87 (77-99)	104 (86-119)	<0.0001
Length of Stay (days avg, SD)	1.30 (0.8)	1.27 (0.6)	0.7427
ER Visit (n,%)	31 (8.93)	4 (10.81)	0.7618
30 Readmission (n,%)	12 (3.46)	2 (5.41)	0.6341
Pain Outcomes			
Pain score (mean, SD)			
PACU	6.15 (3.0)	5.97 (4.0)	0.7977
One hour post op	6.15 (2.3)	5.54 (2.8)	0.1344
Morning after surgery	4.52 (2.3)	4.02 (2.0)	0.2081
Discharge	4.03 (2.5)	3.38 (2.6)	0.1324
Tylenol Dose (mean, SD)	1.36 (1.8)	2.35 (1.7)	0.0012
Morphine Equivalents (mean, IQR)			
Hospital Day 1	62 (47-79.5)	26.5 (11.5-51)	<0.0001
Hospital Day 2	15 (5-30.5)	15 (0-32)	0.5041
Hospitalization Total	83 (58.5-110)	49 (14.5-89)	<0.0001

Conclusion

Patients that received a TAP block as a part of their perioperative anesthetic care utilized less in hospital narcotics than those patients that did not receive a TAP block. TAP blocks should be considered as part of a multimodal pain control strategy for patients undergoing LSG.