Enhanced Recovery After Surgery (ERAS) protocol in Bariatric Surgery leads to decreased Length of Stay (LOS) and Postoperative Narcotic Use (PONU) during the hospital stay and after discharge

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Background/Introduction

- ERAS pathway protocol developed initially for colorectal surgery patients has been shown to minimize hospital costs, reduce LOS and decrease PONU.[1]
- A correlation between adoption of ERAS protocol and reduction in length of stay without increased emergency department visits or re-admissions has been demonstrated in bariatric surgery.
- Attempts to tailor these protocols to the special perioperative needs of bariatric patients are ongoing.

Purpose

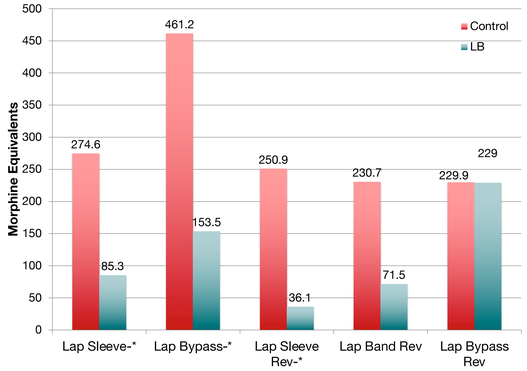
The purpose of this study is to examine the effects of postoperative narcotic use and length of stay based on changes to the Bariatric Surgery ERAS protocol over time.

Methods

- Institutional data from pre- and post introduction of the intraoperative liposomal bupivacaine block was compared over the first 15 months of use to 15 month controls from 12/2012 to 8/2015:
  - 417 patients : 83% female, 87% Caucasian
- Institutional data from the periods before and after three key MSAQUIP quality improvement initiatives were compared:
  - DROP (2015): discharge medications prescribed at H&P appointment
  - ENERGY (2017-2018): non-narcotic medication prescribed 24 hours pre-op and pre-op Emend given
  - BSTOP (2020-2021): 3 days of nonnarcotic medications prescribed pre-op, 5 days of nonnarcotic medications prescribed post-op

Results

Average Morphine Equivalents by Procedure Before and After Liposomal Bupivicaine Block



Average Length of Stay by Procedure Before and After Liposomal Bupivicaine Block

	Control n=119	LB n=298	t-test Control v LB
LOS-Total (days)	3.5 ± 0.16	2.97 ± 0.11	p<0.05
LOS-Sleeve Only	2.95 ± 0.45	2.57 ± 0.27	p<0.05
LOS Bypass Only	4.42 ± 3.79	3.36 ± 2.14	p<0.05
LOS Revision Group	2.9 ± 4.7	3.2 ± 13.4	NS
LOS Revision of Sleeves	3.04 ± 0.63	2.44 ± 0.91	NS

Introduction of intraoperative liposomal bupivacaine use reduced length of stay overall from 3.5 days to 2.97 days ($p < 0.05$) for all bariatric patients. Average morphine equivalents were reduced by at least one-third of previous dosing by procedure.

Pre and Post-ENERGY Protocol Narcotic Use

	Before (n=56)	During Study (n=150)
Liposomal Bupivicaine Blocks	55	149
Tylenol/Gabapentin preop	51	145
No Narcotics after PACU	16	49
MME after PACU	39.4	17.9
MME for those who got Narcotics	55.6	26.7
Received Non-narcotics on discharge	4/56	134/150
Mean MME as outpatient	45	30

Mean Length of Stay Before and After DROP Protocol

	UNMC-Mean (Days)	All sites-Mean (Days)
2014-5 Baseline	2.79	2.51
4-6/2017 Ramp-Up	2.5	1.2
End	1.8	1.8

Following the rollout of DROP and ENERGY protocols, institutional bariatric length of stay decreased again to 1.8 days. By 2021 with the inclusion of the BSTOP pathway, only 49 of the 150 patients studied in this period received narcotics after PACU, and of those who were discharged with narcotics, 59% reported that they did not use them. Total MME prescribed was reduced from 750 before 2015 to 60 in 2021.

Conclusion

Evolving interventions to implement an Enhanced Recovery after Surgery Pathway for bariatric surgery patients are associated with decreased hospital length of stay and postoperative narcotic use in this patient population.

References

1. Scott MJ, Baldini G, Fearon KC, et al. Enhanced Recovery After Surgery (ERAS) for gastrointestinal surgery, part 1: pathophysiological considerations. *Acta Anaesthesiol Scand*. 2015;59(10):1212-1231. doi:10.1111/aas.12601