

[NM-346] Bupivacaine Injection Does Not Improve Outcomes after Adenotonsillectomy

¹Cravero J, ²Chen E, ²Frazee T, ²Taenzer A

¹Boston Children's Hospital , Boston , MA, USA; ²Dartmouth Hitchcock Medical Center , Lebanon , NH, USA

Introduction: Adenotonsillectomy is accompanied by significant pain. Injection of the tonsils with local anesthetic at the time of tonsillectomy has been suggested to be an effective method for improving pain postoperatively. Multiple peer-reviewed studies have evaluated this practice yet the results remain equivocal and depend on the exact outcome analyzed.(1,2) In addition, these studies were conducted with inhaled anesthesia without optimal nausea and vomiting prophylaxis. As part of an ongoing process improvement project we undertook this study to evaluate the effect of bupivacaine injection in tonsils at the time of surgery when a total intravenous anesthetic was provided and current standard nausea and vomiting prophylaxis was administered.

Methods: After IRB approval we randomized 40 tonsillectomy/adenoidectomy patients into two groups 1. Group LA received an injection of 0.5% bupivacaine with 1/200K epi 1 - 1.5cc in the base of each tonsil prior to tonsillectomy. 2. Group C received no injection (the surgeon acted as though he/she was injecting the tonsil prior to tonsillectomy). All other members of the care team were blinded to group assignment. The anesthetic management was standardized including induction with Sevoflurane + 1-2 mcg/kg of fentanyl + 2-3mcg/kg of propofol bolus, followed by endotracheal intubation and maintenance of anesthesia with a propofol infusion at 250 mcg/kg/minute. Adjustment of propofol infusion and additional opiate doses were administered to keep hemodynamics within 30% of baseline. All patients received ondansetron and decadron -.1mg/kg. Pencil bovie/suction bovie technique. One blinded research assistant graded emergence agitation. Recovery nurses, blinded to assignment, assessed pain and were instructed to administer additional fentanyl 0-1 mcg/kg for FLACC, Wong Baker, or NRS of greater than 4/10. Discharge pain control was standardized to acetaminophen/hydrocodone and motrin. Parents rated nausea and vomiting in the first 24 hours after the procedure and behavioral changes at 2 days after the procedure.

Results: Results are found in Table 1 and Table 2. Pain ratings of 8 or greater for more than 10 minutes were considered "severe pain". A PAED rating of 10 or greater was counted as emergence agitation.

Conclusions: In our cohort, injection of tonsils with 0.5% bupivacaine during tonsillectomy did not improve pain, agitation, or behavioral outcomes when accompanying a TIVA general anesthetic

References:1. Sun J,Xiuying W, et. al. International Journal of Pediatric Otorhinolaryngology 74(2010)369-73
2. Hollis J et. al. Cochrane Database Syst Rev. 2000(2) CD001874

Table 1. Demographic and Surgical Factors:

Variable	LA	C	P value	test
Age (yrs)	4.7	4.9	.76	t test
Weight (kg)	21.5	20.1	.48	t test
Surgical Time (mins)	24.7	27.1	.34	t test
Intraop Fent (mean mcg/kg)	2.0	1.8	.4	t test

Table 2. Outcomes:

Variable	LA	C	P value	test
Post Op Severe Pain	6/18	10/22	0.65	Chi Square
Post Op Fentanyl dose (mean mcg/kg)	0.7	0.9	0.39	t test
Nausea Reported (24 hours)	4/17	1/20	0.42	Chi Square
Vomiting Reported (24 hours)	3/17	1/20	0.23	Chi Square
Emergence Agitation	16/18	15/22	0.1	Chi Square
Length of Stay in Recovery (mean mins)	84.1	81.4	0.58	t test
Post Hospitalization Behavior Changes	9/18	7/17	0.6	Chi Square