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INTRODUCTION

Trapeziectomy alone or in combination with a suspensionoplasty technique is a common surgical treatment for symptomatic basal joint arthritis, but is considered one of the more painful procedures of the hand. Various modalities for perioperative pain control are employed in the endeavor to manage postoperative pain including peripheral nerve blocks and the infiltration of local anesthetics into the surgical site. We undertook a prospective comparative study with the hypothesis that peripheral nerve blocks would provide better pain control than local anesthesia with Marcaine or Exparel with respect to pain scores and opioid pill consumption.

MATERIALS & METHODS

All consecutive patients undergoing thumb basilar joint arthroplasty were prospectively enrolled and allocated to one of three perioperative anesthesia Groups: (1) peripheral nerve block, (2) local anesthesia with Marcaine and (3) local anesthesia with Exparel. Total opioid pill consumption and visual analog scale (VAS) pain scores were reported and collected for the first 5 postoperative days (POD).

TABLE & FIGURE

Table 1 Pain scores on visual analog scale and morphine equivalents

Study group	Preincisional			Postincisional			p Value
	Average	Range	SD	Average	Range	SD	
PACU entrance pain score	0.79	0-8	2.56	1.04	0-10	2.89	0.74
PACU exit pain score	1.42	0-7	1.50	2.74	0-9	2.53	0.04
Mean PACU pain score	1.34	0-6	2.04	3.03	0-8.5	2.41	0.009
Time spent in PACU (min)	74.50	28-205	41.77	77.64	31-127	24.02	0.91
PACU morphine equivalents	211.18	0-727.6	300.07	299.24	0-731.8	264.41	0.25

Abbreviations: PACU, postanesthesia care unit; SD, standard deviation.



RESULTS

Seventy-eight patients were enrolled in the study with 27, 23 and 28 patients assigned to the peripheral nerve block (Group 1), Marcaine (Group 2) and Exparel (Group 3) groups, respectively. All groups experienced an increase in both opioid pill consumption and VAS scores from POD 0 to POD 1 ($p < 0.05$). Postoperative VAS was lowest in Group 3 from POD 0 to 2, although not statistically significant. During the same period, except for POD 0, average VAS scores were highest in Group 1 (Peripheral block). However, after POD 2, VAS scores normalized between all Groups and decreased uniformly thereafter. Total opioid consumption was lowest in Group 3 (11 pills) compared to Group 1 (17 pills) and Group 2 (19 pills) ($p = 0.06$).

DISCUSSION

There was a trend in all Groups towards increased postoperative pain and opioid consumption between POD 0 and 1. After POD 2, pain decreased uniformly in all groups. Total opioid consumption was found to be least in the Exparel group. Similarly, there was a trend towards better postoperative VAS in the Exparel group, but the trend was not statistically significant and did not continue beyond POD 2. Peripheral nerve blocks were not found to be superior in terms of postoperative pain beyond POD 0. Moreover, Peripheral nerve blocks and Marcaine alone had higher pain scores and opioid consumption after POD 0. The effectiveness of each modality, as well as their potential risks and costs, especially with peripheral nerve blocks, should be considered when determining the optimal strategy.