

# Functional outcomes using lumbar erector spinae plane block for post-operative analgesia in single level spine arthrodesis

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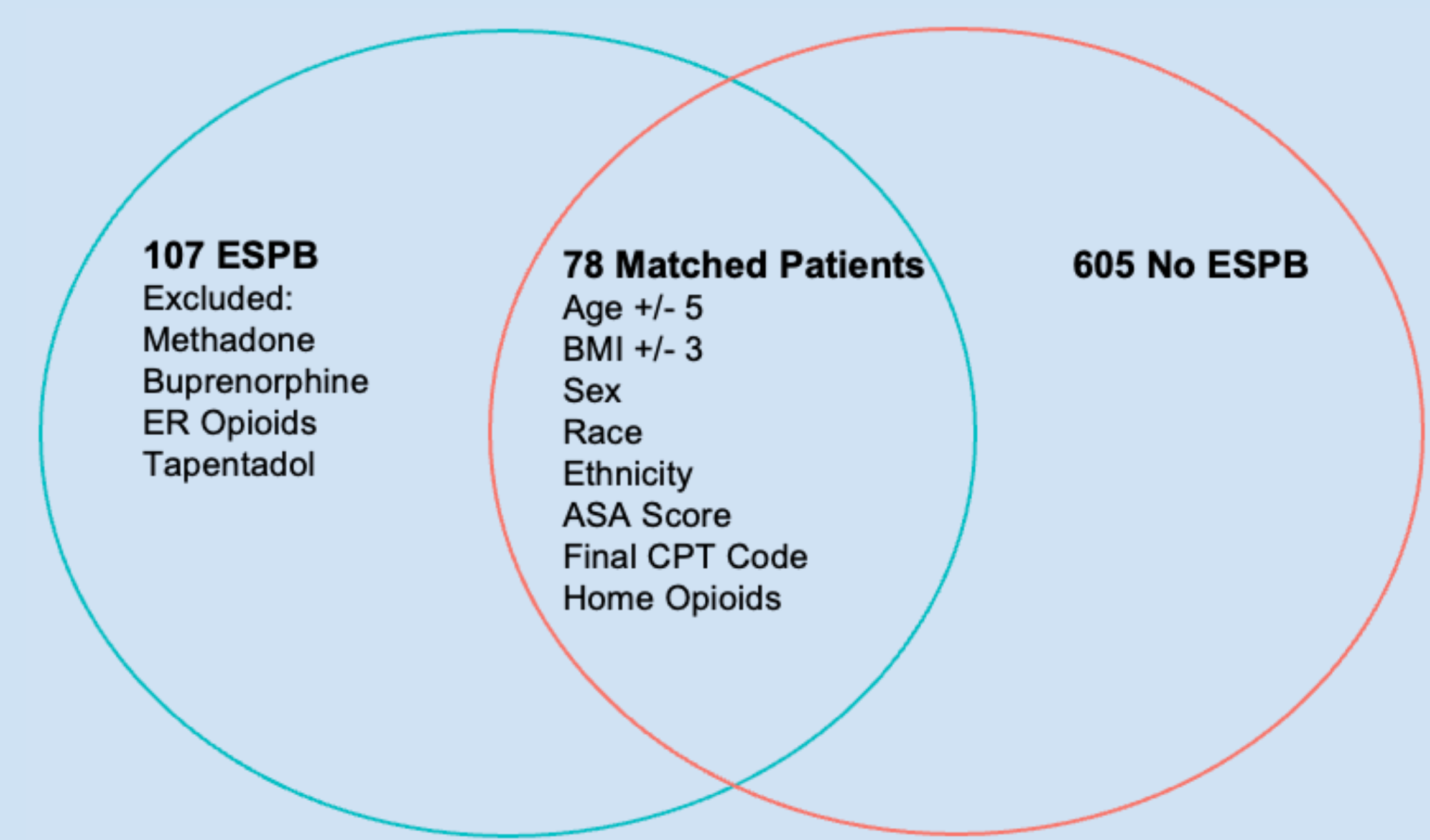
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## BACKGROUND

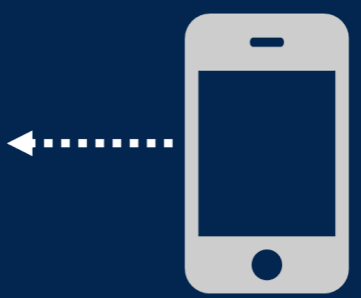
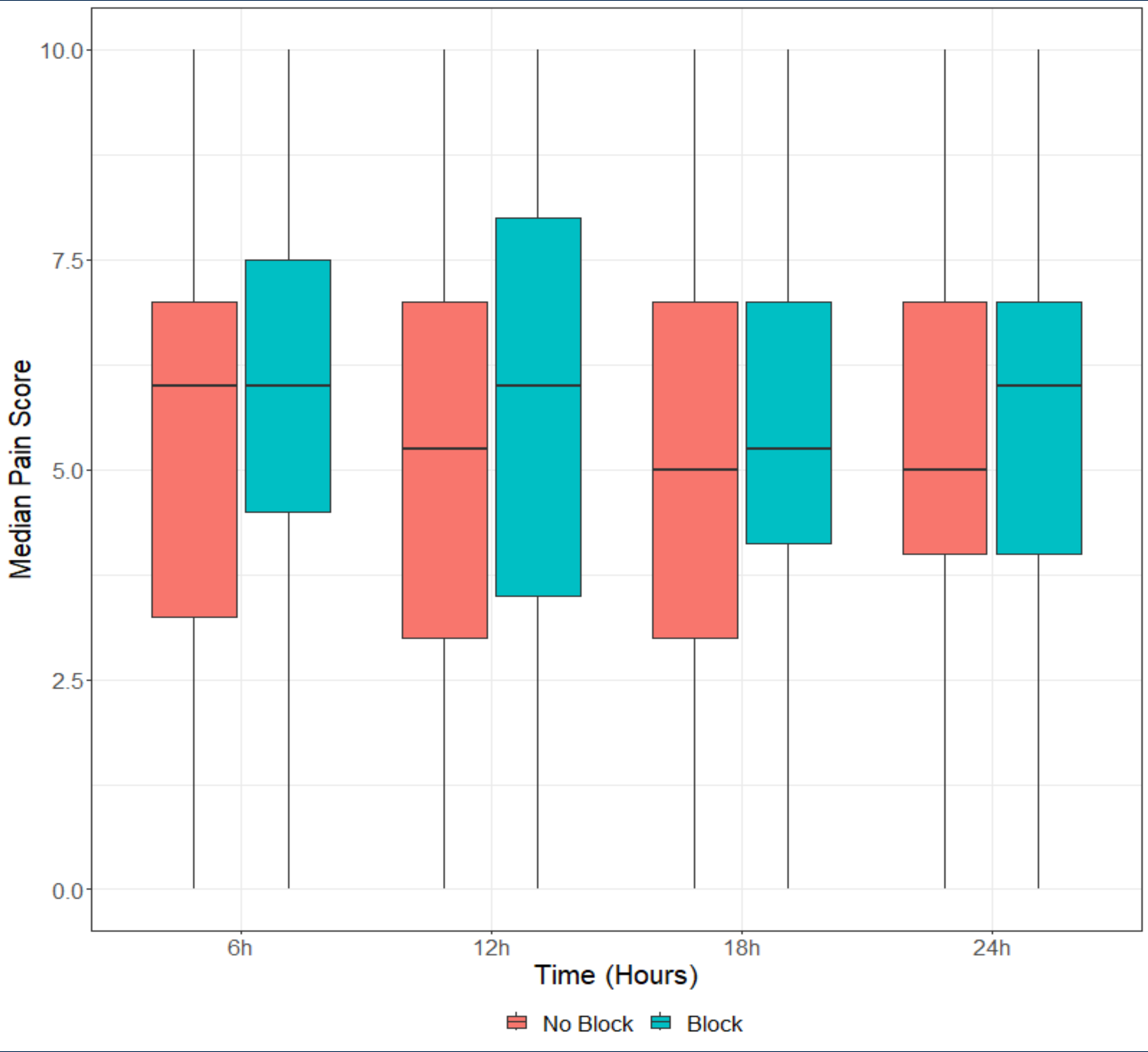
Lumbar ESPB has been shown to decrease pain scores and opioid use after spinal surgery without causing lower extremity weakness. We investigated this in our general neurosurgical population.

## METHODS

- We performed a retrospective cohort-matched case-control study
- Patients undergoing single level spine fusion under general anesthesia
- Duke University Hospital from 8/2020-7/2023
- Primary outcome was hospital length of stay.
- Secondary outcomes: pain scores and OMEs used in 24 hour increments
- Median data and interquartile ranges were identified.
- Data was analyzed using a Wilcoxon rank sum test.



# Lumbar ESPB did not improve outcomes in a non-controlled surgical population.



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## RESULTS

| Table 1. Time to Discharge, Median pain scores, and Postoperative OMEs |                   |                  |         |
|------------------------------------------------------------------------|-------------------|------------------|---------|
|                                                                        | No Block (N = 78) | Block (N = 78)   | P value |
| Time to Discharge (hours)                                              | 94.7 [70.3, 148]  | 92.0 [49.3, 143] | 0.156   |
| Median Pain Score                                                      |                   |                  |         |
| 0-6h                                                                   | 6.0 [3.3, 7.0]    | 6.0 [4.5, 7.5]   | 0.207   |
| 6-12h                                                                  | 5.3 [3.0, 7.0]    | 6.0 [3.5, 8.0]   | 0.576   |
| 12-18h                                                                 | 5.0 [3.0, 7.0]    | 5.3 [4.1, 7.0]   | 0.178   |
| 18-24h                                                                 | 5.0 [4.0, 7.0]    | 6.0 [4.0, 7.0]   | 0.264   |
| 24h Postop OME                                                         | 39 [20, 73]       | 68 [31, 97]      | 0.012   |
| 48h Postop OME                                                         | 83 [50, 165]      | 98 [49, 137]     | 0.836   |
| 72h Postop OME                                                         | 135 [71, 232]     | 105 [57, 180]    | 0.119   |
| Median [Q1, Q3]; Wilcoxon rank sum test                                |                   |                  |         |

| Figure 2. Demographics    |                   |                   |                   |
|---------------------------|-------------------|-------------------|-------------------|
|                           | No Block (N=78)   | Block (N=78)      | Overall (N=156)   |
| Age                       |                   |                   |                   |
| Mean (SD)                 | 66.8 (10.0)       | 66.8 (9.90)       | 66.8 (9.94)       |
| Median [Min, Max]         | 69.0 [39.0, 84.0] | 69.0 [42.0, 81.0] | 69.0 [39.0, 84.0] |
| Sex                       |                   |                   |                   |
| Female                    | 34 (43.6%)        | 34 (43.6%)        | 68 (43.6%)        |
| Male                      | 44 (56.4%)        | 44 (56.4%)        | 88 (56.4%)        |
| BMI                       |                   |                   |                   |
| Mean (SD)                 | 29.5 (4.04)       | 29.9 (4.17)       | 29.7 (4.10)       |
| Median [Min, Max]         | 29.5 [21.4, 38.5] | 30.2 [18.9, 38.9] | 29.6 [18.9, 38.9] |
| Race                      |                   |                   |                   |
| Black or African American | 15 (19.2%)        | 12 (15.4%)        | 27 (17.3%)        |
| Caucasian/White           | 63 (80.8%)        | 65 (83.3%)        | 128 (82.1%)       |
| Asian                     | 0 (0%)            | 1 (1.3%)          | 1 (0.6%)          |
| Ethnicity                 |                   |                   |                   |
| Not Hispanic/Latino       | 78 (100%)         | 78 (100%)         | 156 (100%)        |
| ASA Score                 |                   |                   |                   |
| 2                         | 17 (21.8%)        | 17 (21.8%)        | 34 (21.8%)        |
| 3                         | 61 (78.2%)        | 61 (78.2%)        | 122 (78.2%)       |
| Final CPT Code            |                   |                   |                   |
| 22612                     | 40 (51.3%)        | 40 (51.3%)        | 80 (51.3%)        |
| 22630                     | 6 (7.7%)          | 6 (7.7%)          | 12 (7.7%)         |
| 22633                     | 32 (41.0%)        | 32 (41.0%)        | 64 (41.0%)        |
| Home Opioids              |                   |                   |                   |
| None                      | 52 (66.7%)        | 52 (66.7%)        | 104 (66.7%)       |
| Yes                       | 26 (33.3%)        | 26 (33.3%)        | 52 (33.3%)        |

## DISCUSSION

- Previous studies have shown significant benefit with this nerve block in controlled, randomized, and generally healthier populations.
- Institutional experience has shown both positive patient and surgeon perception when ESPB is used.
- Possible confounding factors are: nursing culture, physician prescribing culture, lack of control of intraoperative adjuncts and intraoperative opioids, not controlled patient selection, not controlled performers of block (trainees and non-regional trained anesthesiologists).
- There is ongoing analysis regarding type of local anesthetic used for ESPB at our institution.