



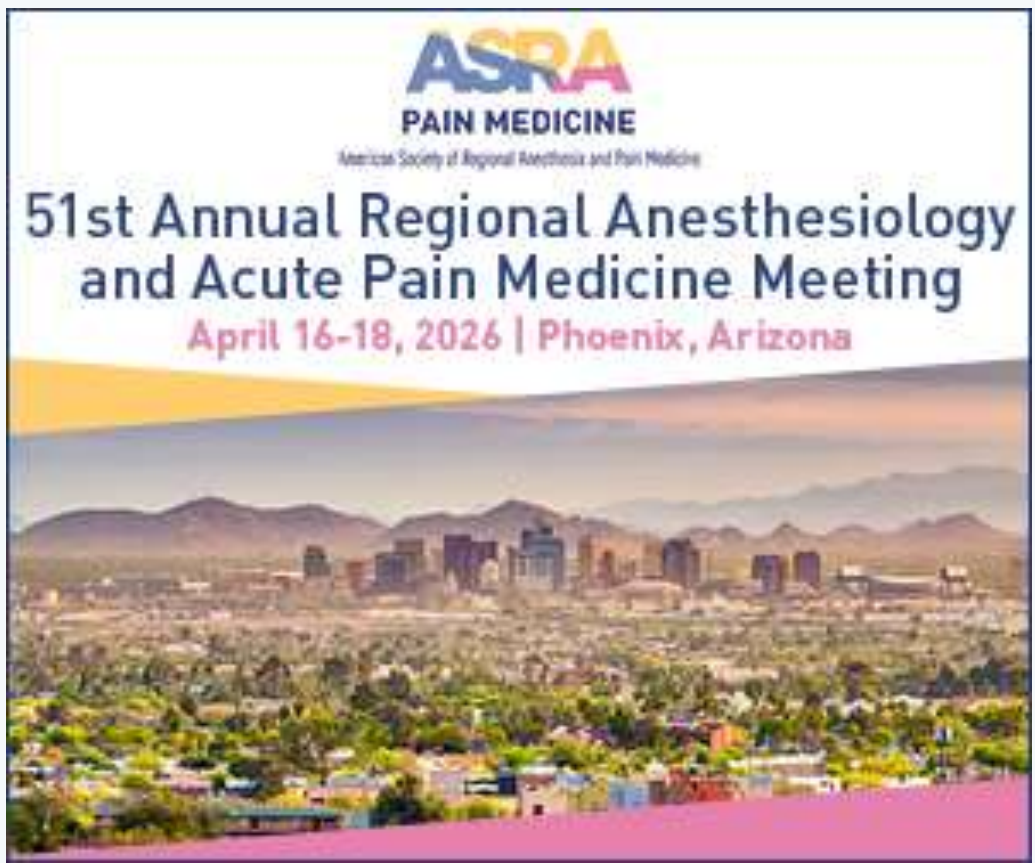
Utilization of Fascial Plane Blocks in Patients with Complex/Chronic Pain Undergoing Spine Surgery: An Institutional Experience

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INTRODUCTION

- Complex pain patients are more likely to experience poor outcomes after surgery.
- At Hospital for Special Surgery, the Perioperative Pain Service (POPS) manages these high-risk patients by developing personalized multimodal pain management plans¹.
- For patients with complex pain undergoing spine surgery, strategies include regional techniques such as the erector spinae plane block (ESP)^{2,3}.
- The aim of this study was to describe fascial plane block (FPB) utilization in patients with complex pain undergoing spine surgery.

METHODS

- After IRB approval (IRB#2021-1899), we retrospectively queried our internally validated POPS registry data records between 01/12/2022 and 11/03/2025, limited to patients who underwent a spine procedure and required an inpatient consultation with the complex/chronic pain service arm of POPS.
- Data extracted included patient demographics, ASA physical status, block type and procedure; these variables were compared between those with and without a block.
- Categorical variables were compared using χ^2 or Fisher’s exact tests and continuous variables using t-tests or Wilcoxon rank-sum tests, with statistical significance set at $p < 0.05$.
- This study was in accordance with STrengthening the Reporting of OBservational studies in Epidemiology guidelines⁴.

RESULTS

- Among 1,777 included unique procedure, 558 (31.4%) involved receipt of a nerve block.

Table 1 Distribution of Surgical Procedures by Regional Anesthesia Block Type and Combination

Surgical procedure	Single block (n = 474)				Combination block (n = 77)		No PNB (n = 1,219)	Other (n = 7)
	Bilateral ESP (n = 290)	Unilateral TAP (n = 128)	Bilateral TAP (n = 44)	Unilateral ESP (n = 12)	Bilateral ESP + Bilateral TAP (n = 16)	Bilateral ESP + Unilateral TAP (n = 61)		
DECOMPRESSION N DISC SPINE (n = 213)	73	2	0	3	0	0	135	0
FUSION LUMBAR XTREME LATERAL INTERBODY 2 LEVELS (n = 55)	0	27	2	0	0	11	15	0
FUSION LUMBAR ANTERIOR 1 LEVEL WITH INSTRUMENTATION (n = 57)	1	10	23	0	6	2	14	1
FUSION LUMBAR ANTERIOR LATERAL INTERBODY (n = 44)	1	12	6	0	3	9	11	2
FUSION LUMBAR XTREME LATERAL INTERBODY 1 LEVEL (n = 69)	1	34	2	0	0	10	21	1
FUSION LUMBAR XTREME LATERAL INTERBODY GREATER THAN 2 LEVELS (n = 40)	2	20	0	0	0	11	6	1
REMOVAL HARDWARE POSTERIOR LUMBAR SPINE (n = 62)	15	6	2	1	0	3	35	0
Other (n = 1237)	197	17	9	8	7	15	982	2

RESULTS

- The median age was 62 years for both groups. Racial and ethnicity distributions differed modestly ($p=0.030$ and $p=0.046$) and ASA status varied significantly with patients receiving a FPB higher in the ASA 1 and 2 groups ($p < 0.001$).
- Among the 558 to receive a block, 290 (51.9%) represented a bilateral ESP, most commonly for disc decompression ($n=73$, 25.2%) followed by unilateral Transversus Abdominis Plane block (TAP) ($n=128$, 22.9%), most commonly used for fusion lumbar extreme interbody procedures including 1 ($n=34$, 26.5%) and 2 ($n=27$, 21.1%) levels (Table 1).
- From the total cohort, 474 (26.7%) of cases received only one type of block while only 77 (4.3%) received a combination block.
- Regarding patients who received a block (558), the most common combination block was bilateral ESP with unilateral TAP ($n=61$, 10.9%) , primarily used for fusion lumbar extreme lateral interbody procedures involving 2 ($n=11$, 13%) or greater ($n=11$, 13%) levels (Table 1).
- This was followed by bilateral ESP with bilateral TAP (2.8%), most frequently for fusion lumbar anterior 1 level procedures (6, 37.5%) (Table 1).

DISCUSSION

- Our institutional data provides a snapshot of evolving clinical practice, revealing increasing use of ESP and combination techniques (most commonly bilateral ESP with TAP) for complex pain patients.
- To our knowledge, this is a first description of combination block use for spine surgery.
- Future regression analysis is intended to delineate reasons for provider preference; however, preliminary data suggests surgical approach, patient complexity, technical feasibility and lack of consensus being reasons for variance in practice.

References & Acknowledgments

