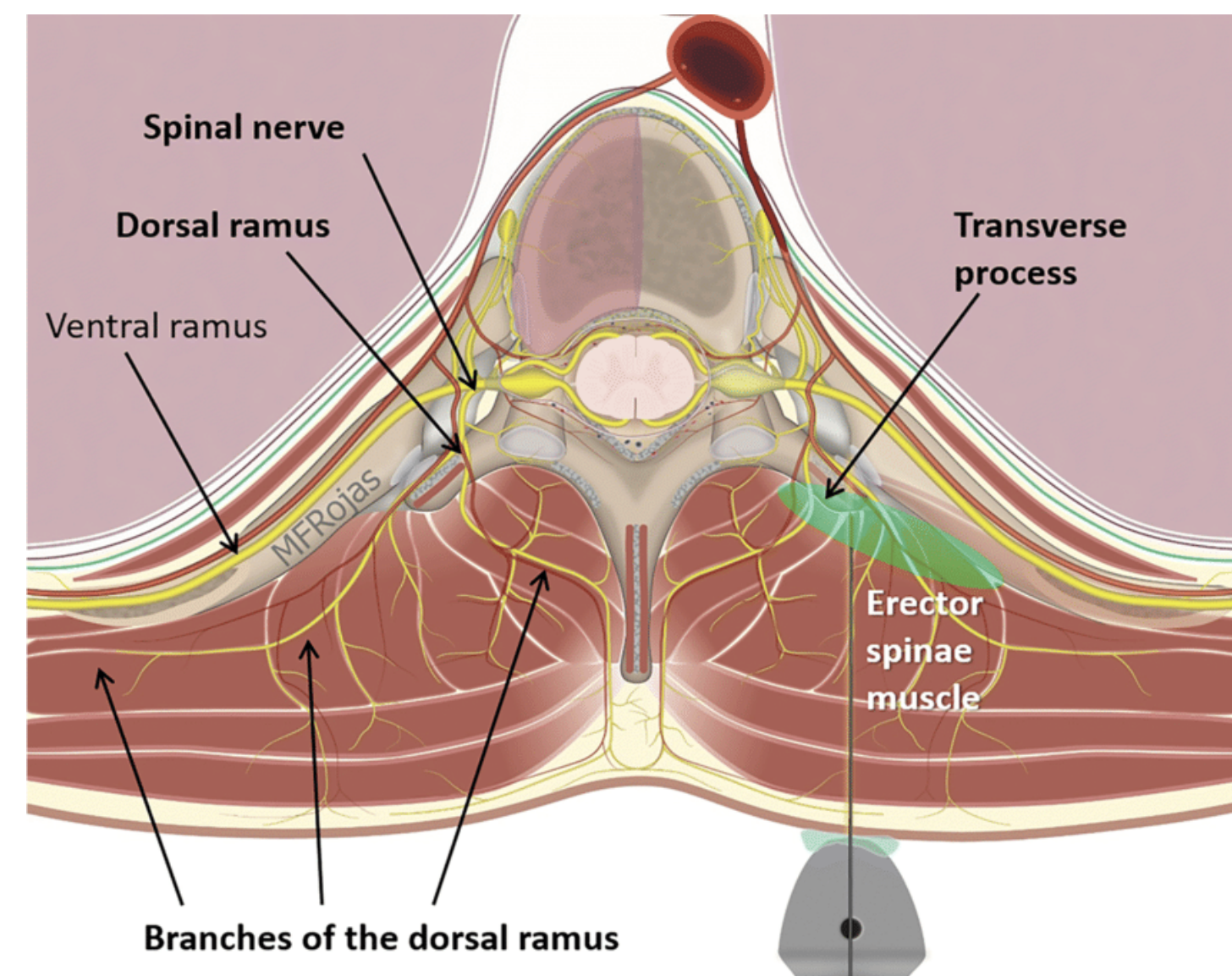


Background

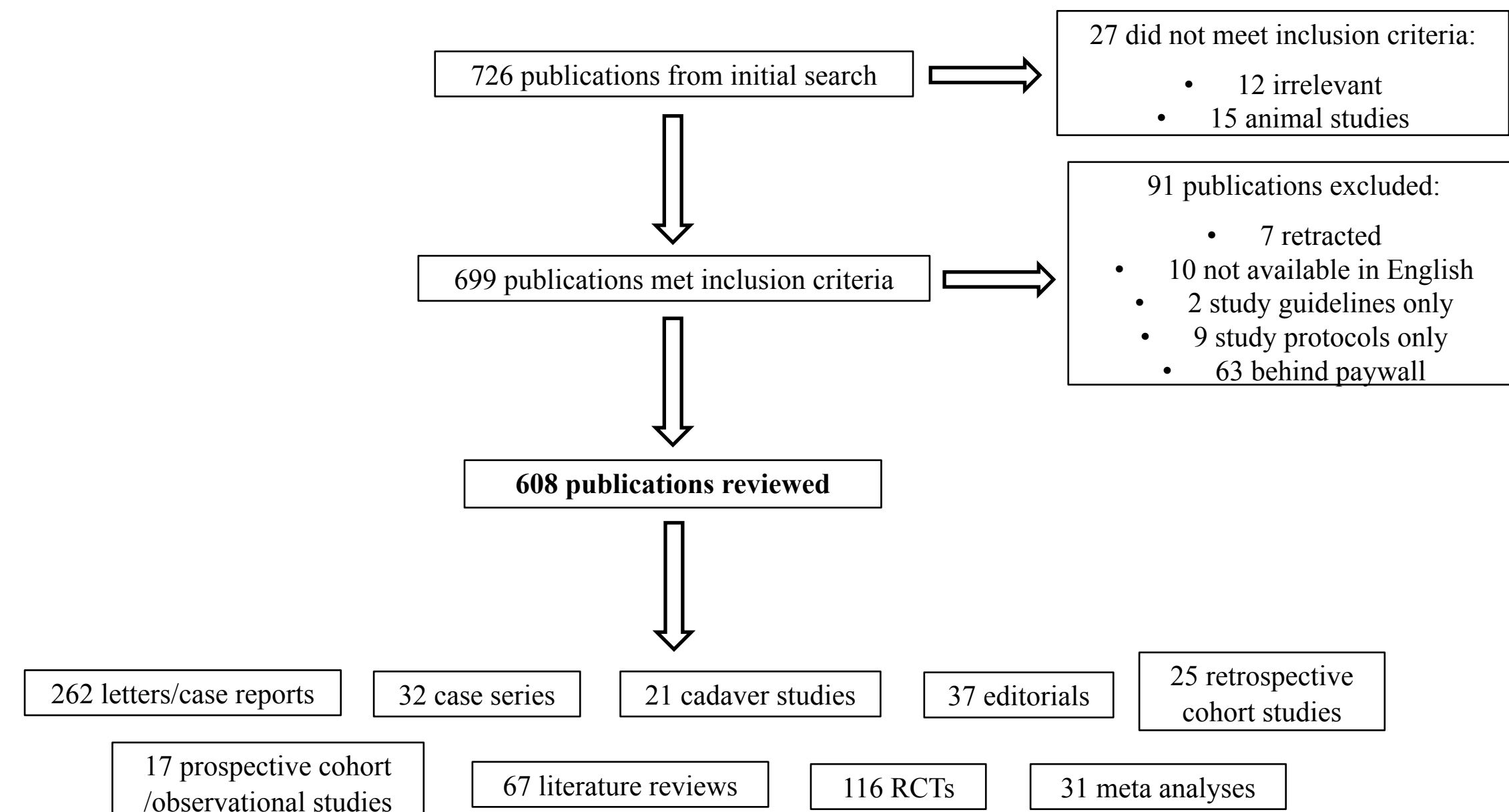
- The erector spinae plane block (ESPB) was first described in 2016 as an interfascial plane block to treat thoracic neuropathic pain [1].
- An initial analysis of 242 patient cases who had ESPB performed was published in 2019. It has been extensively referenced in the literature over 330 times [2].



- We provide an updated and comprehensive analysis of the literature about ESPB, building upon our previous 2019 review [2].

Methods

- A PubMed literature search was conducted from August 1, 2018, to December 31, 2022, using the same search criteria as the previous review.



- In this analysis, 6,253 ESPB cases were derived from 608 remaining publications. In total, including the 242 cases analyzed in the initial 2019 review, there were 6,495 ESPB cases.

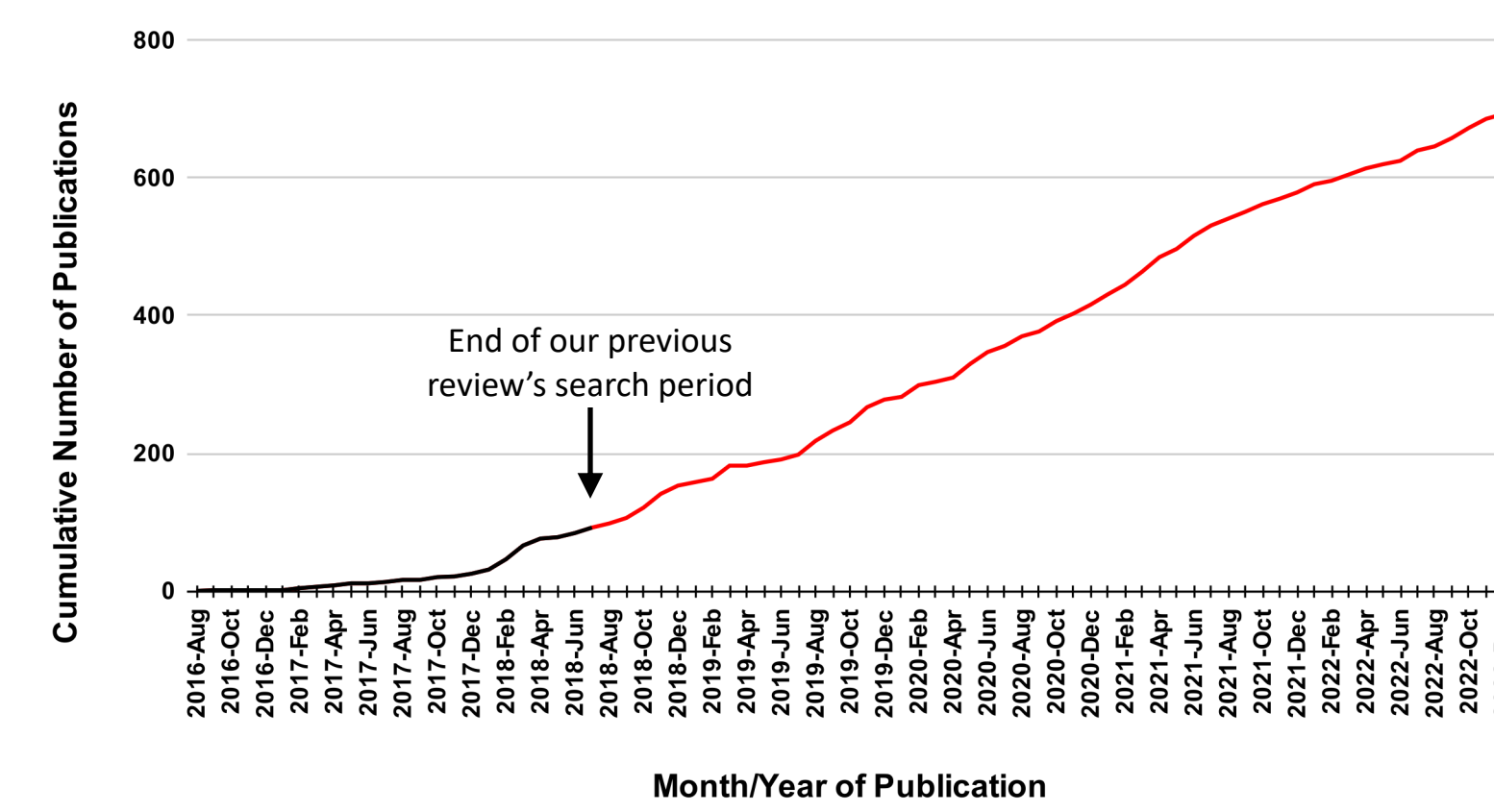
The erector spinae plane block (ESPB): a pooled data review of 6,495 cases since its first publication in 2016

Sharon Chao BS, Jonathan Thein BS, Ksenia Kasimova BS, Raina Singh, Ban Tsui MD

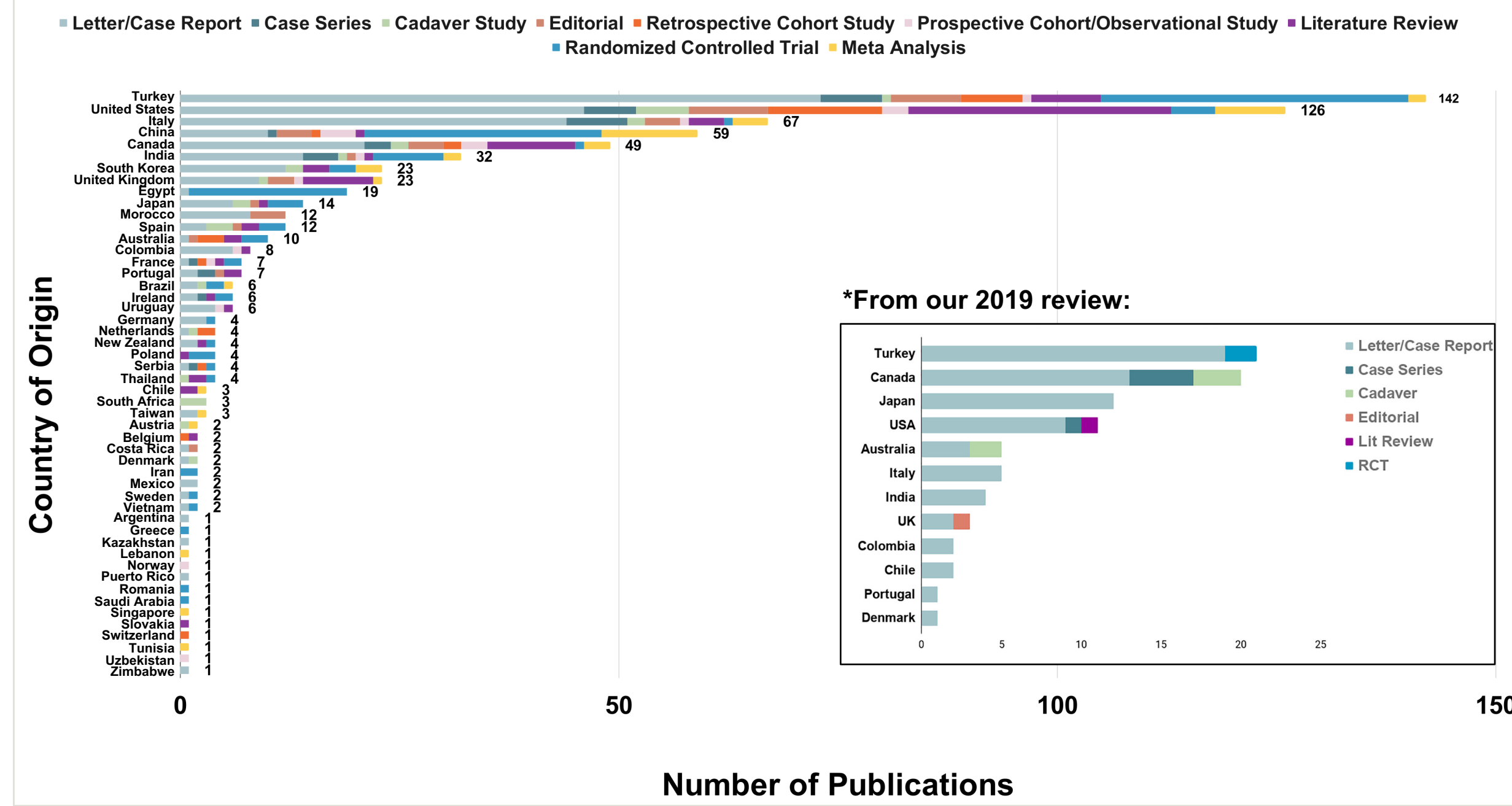
Department of Anesthesiology, Perioperative, and Pain Medicine, Stanford University School of Medicine

Results

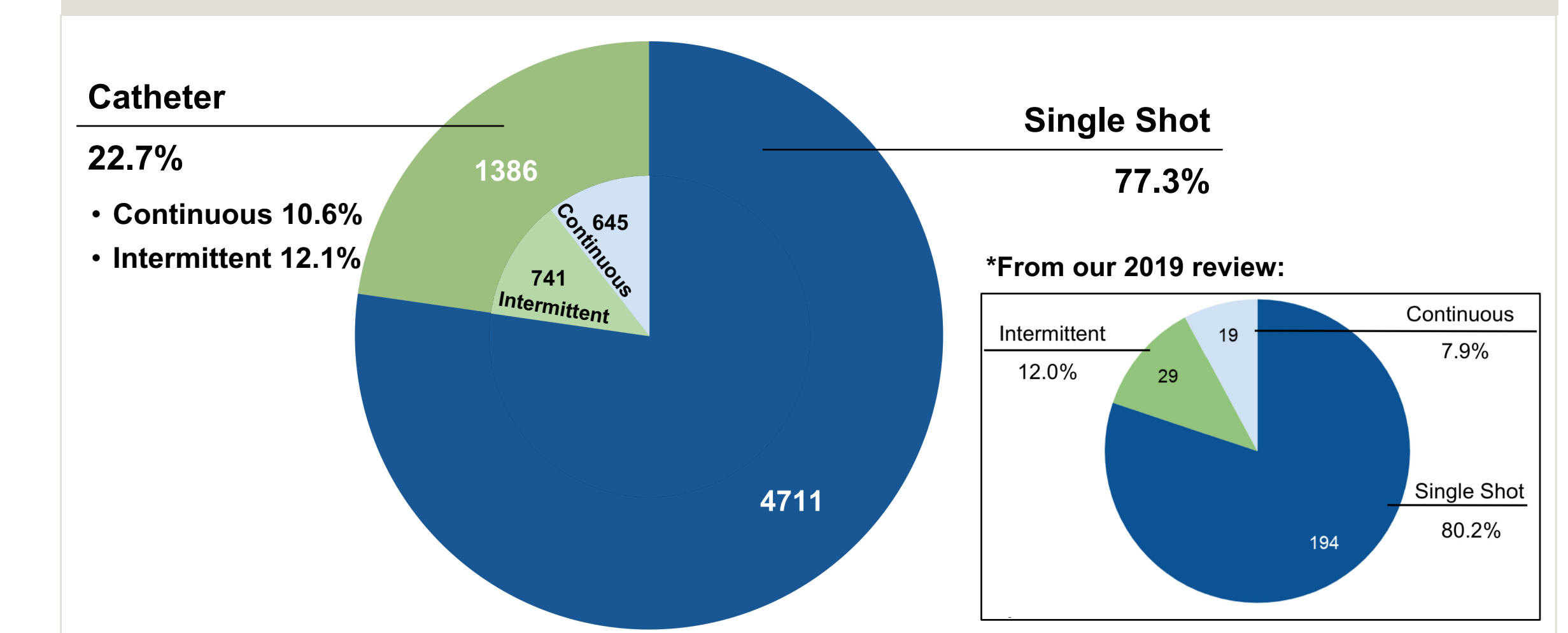
- The number of ESPB publications **significantly increased** over time.



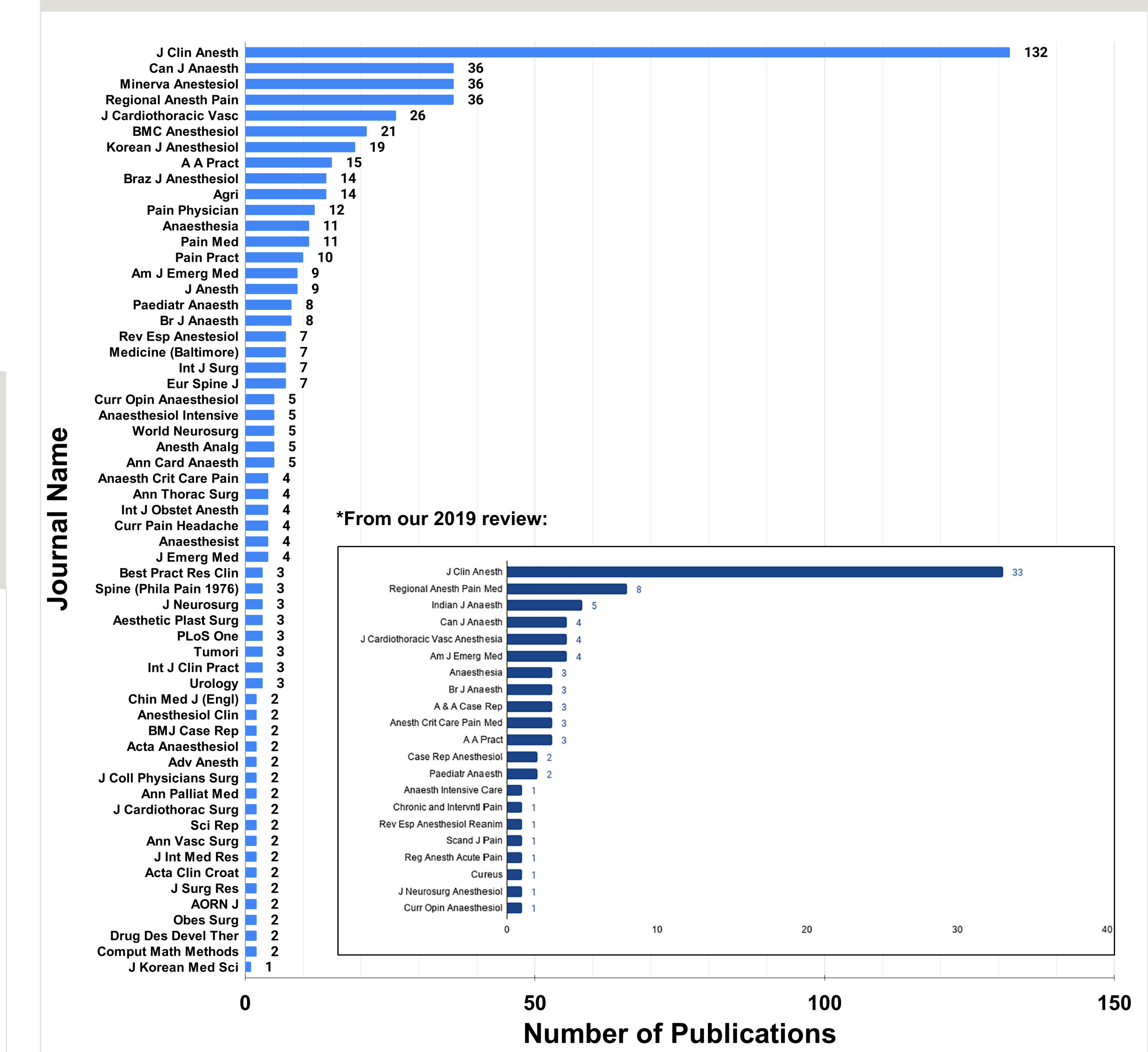
- The **overall percentages of literature reviews, randomized controlled trials, and meta-analyses increased** from 1.2%, 2.4%, and 0% in our previous review to 11%, 19.1%, and 5.1% in this review.
- The most publications were from Turkey, the U.S., and Italy.



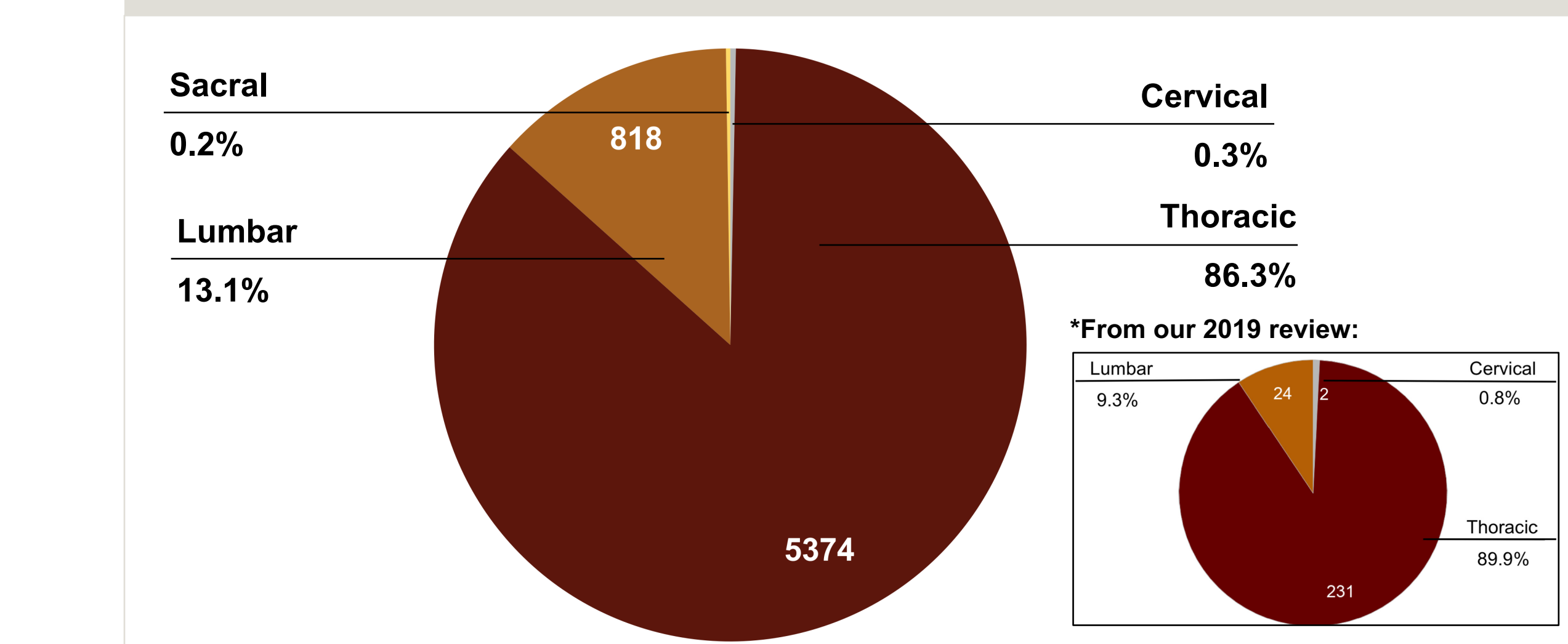
- Single shot block was still the most common technique**, with 20 mL of 0.25% bupivacaine being the most used anesthetic.



- The **Journal of Clinical Anesthesia** had the most publications, which is the same as our previous review.



- Anatomic locations of the blocks were still **primarily at the thoracic level**.
- Some sacral ESPB blocks (0.2%) were performed, which were not seen in our previous review.



Results

- In agreement with our previous review, ESPB was mainly used with multimodal analgesia, and it reduced opioid use.
- Only 23.7% of patients reported sensory/motor changes.**

Categories	% (n)				*From 2019 review:
Total number of cases	100 (6,253)				100 (242)
Adult vs. pediatric vs. not recorded	92.5 (5,782), 6.1 (383), 1.4 (88)				90.5 (219), 9.5 (23), (0)
Adverse events	0.8 (52)				0.4 (1)
Categories	Yes	No	Not Reported	Not Applicable	% (n)
Multimodal analgesia used	73.0 (4,566)	2.5 (155)	24.2 (1,514)	0.3 (18)	90.9 (220)
Reduction of opioid use	54.3 (3,394)	1.9 (121)	43.5 (2,720)	0.3 (18)	76.0 (184)
Sensory/motor changes	23.7 (1,484)	2.0 (123)	74.3 (4,624)	0.0 (0)	34.7 (84)
Reduction of side effects	13.3 (829)	47.1 (2,943)	39.4 (2,463)	0.3 (18)	

- Adverse events were reported in 0.8% of patients.** The most common were arrhythmia, catheter displacement, chronic pain, and staxis around the stoma, with five cases each.

Conclusions

- The **low percentage of sensory/motor changes aligns with what we found in our previous 2019 review (34.7%)**.
- This raises questions about whether ESPB has a sensorimotor effect like other blocks, which has been noted by other publications as well [3, 4].
 - There are several proposed mechanisms: (1) a differential block that affects fibers differently; or (2) systemic absorption of anesthetics through vasculature [5].
- Flaws:** This review provides no quantitative data. 91 publications were also excluded for various reasons.
- Future work:** Investigating why ESPB does not always present with sensory/motor changes.

References

