

OUTCOMES OF THORACIC TRANSFORAMINAL EPIDURAL STEROID INJECTIONS: A CASE SERIES

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BACKGROUND

- There is extremely sparse literature reporting on the outcomes of thoracic transforaminal epidural steroid injections, including the efficacy and safety of this approach
- There have been a few studies looking at the outcomes of interlaminar thoracic epidural steroid injections
- Benyamin et al concluded that the evidence behind thoracic epidural steroid injections is considered fair

RESEARCH OBJECTIVE

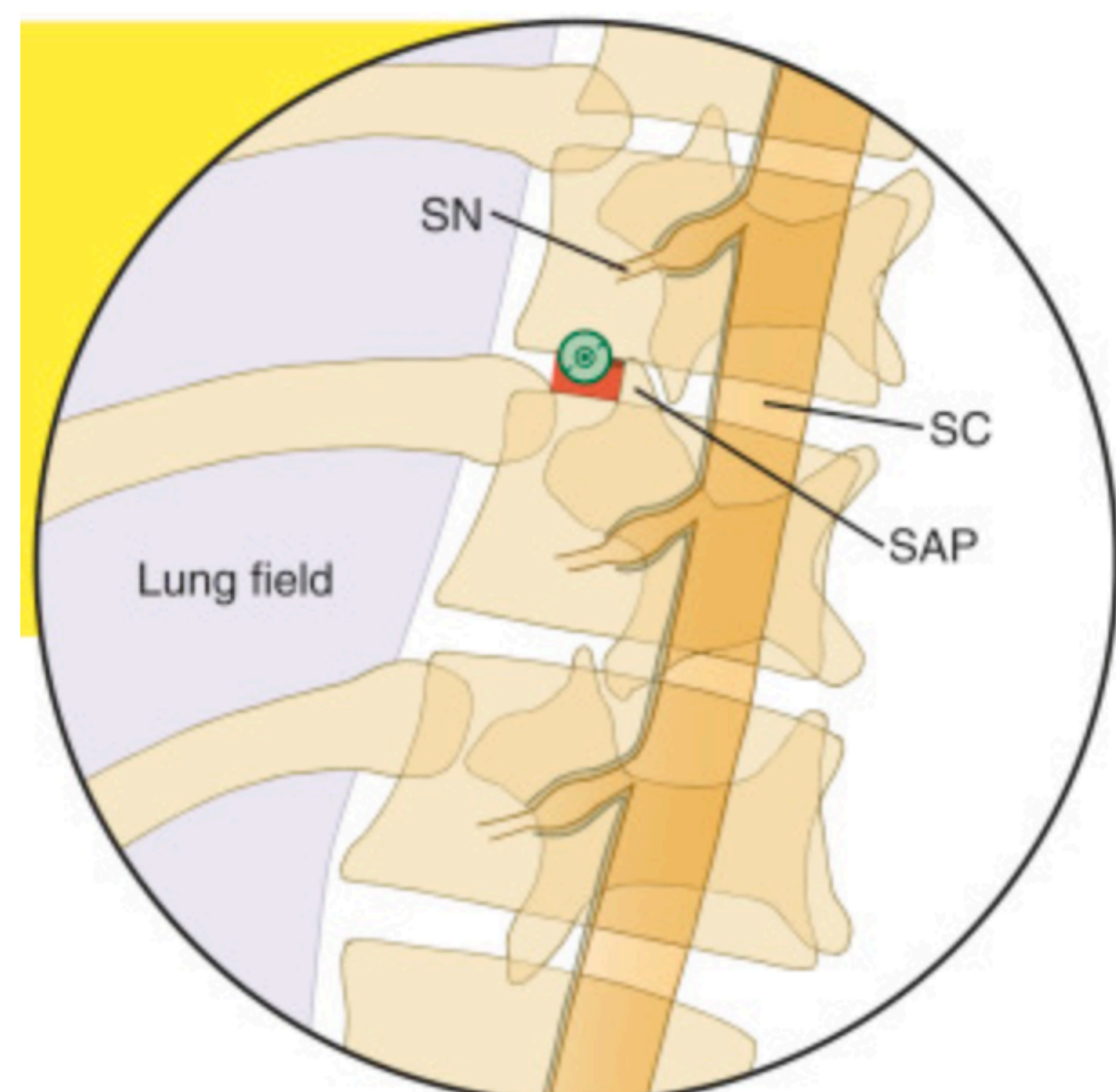
To investigate the outcomes of patients with thoracic radicular pain who underwent thoracic transforaminal epidural steroid injections (TTFESI)

DESIGN

Retrospective case series study from January, 2016 to December, 2019 at a single academic medical center

OUTCOMES

- Primary outcome: pain score using a numeric rating score
- Secondary outcomes: need for repeat injection, progression to surgery, complications of the injections



Trajectory view of infraneural TTFESI approach, "target box" in red

RESULTS

NRS Pain Score Pre-injection	NRS Pain Score Post Injection	Repeat Injection (1=yes, 0=no)	Time to Second Injection
8	5	1	30
4	1	1	54
10	8	1	28
6	0	1	266
4	0	0	n/a
3	6	1	7

- Six Patients (mean age = 60.3 years with a SD = 11.8 years) underwent TTFESI for the treatment of thoracic radicular pain non-responsive to conservative care
- 3/6 patients had pain duration of 6 months or less, and 5 /6 patients had pain duration of 16 months or less
- All injections were performed in accordance with Spine Intervention Society technique guidelines
- Dexamethasone was used for all injections
- The patient's thoracic MRIs underwent independent review by two physicians; 3 patients had thoracic disc herniation, 2 with spondylitic stenosis, and 1 MRI was no longer available for review
- Median pain score using a numeric rating scale prior to injection was 5 (IQR = 4-7.5)
- At follow up (mean = 29.5 days), median pain score was 3 (IQR = 0.25-5.75)
- Three patients received greater than 75% pain reduction, and 2 patients had complete resolution of their pain
- 5 of the 6 patients underwent a single level unilateral injection, with the other undergoing a two-level injection unilateral injection
- Five patients underwent repeat injection with a mean time to repeat injection of 77 days (SD = 107 days)

DISCUSSION

- Of note, 50% of our patients experienced greater than 75% relief, which appears promising despite the limited 'n'
- No patients progressed to surgery
- One symptomatic but transient vasovagal reaction occurred, with no other complications noted
- TTFESI is known to have an inherent risk of pneumothorax; however, of the 11 injections performed, this was not an observed complication
- One symptomatic but transient vasovagal reaction occurred, with no other complications noted

CONCLUSION

- Although only a case series, this is significant in reporting outcomes for the transforaminal approach
- Further research is needed, including multisite cohort studies obtain a larger 'n' as well as prospective studies

REFERENCES

1. Benyamin RM, Wang VC, Vallejo R, Singh V, Helm li S. A systematic evaluation of thoracic interlaminar epidural injections. *Pain Physician*. 2012;15(4):E497-E514.
2. Furman MB. *Atlas of Image-Guided Spinal Procedures*. Elsevier; 2018.