Spinal Diagnostic Injection with Concurrent Scoliosis Specific Exercises for Adult Idiopathic Scoliosis: A Novel Protocol: A Case Report

INTRODUCTION

Adult Idiopathic Scoliosis (AIS) is a degenerative deformity of the spinal segments that can lead to joint stress and pain. Physiotherapeutic Scoliosis-Specific Exercise (PSSE) protocols aim to mitigate these compensatory changes to improve patients' quality of life. We describe a patient with AIS treated with bilateral L5/S1 facet joint injections followed by immediate PSSE to improve rehabilitation tolerance and participation.

METHODS

-A 43-year-old woman with dextroscoliosis developed progressive low back pain radiating to her buttock and had limited benefit from prior scoliosis-specific therapy as well as anti-inflammatory and muscle relaxant medications.
-She had difficulty with prolonged standing, exercising, taking care of her kids, and commuting for long periods of time.
-MRI lumbar spine demonstrated multilevel disc displacement, facet arthrosis, and moderate right neural foraminal narrowing at L4-5.
-She underwent bilateral L5/S1 intra-articular facet injections with triamcinolone 20 mg (40 mg/mL) mixed with 0.5 mL of 1% lidocaine, followed by PSSE later the same day. The protocol of spinal injection and immediate post-injection physical therapy was repeated approximately four months later for recurrent symptoms.

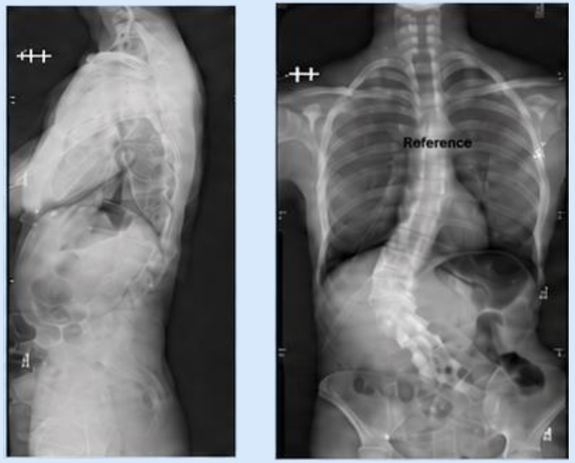


Image 1. XR Spine from 2024 showing moderate to severe reverse-S-shaped thoracolumbar scoliosis. Measurements performed by an orthopedic surgeon, Dr Zein's Establish.
Thoracic Cobb angle: 38; Lumbar Cobb angle: 46; Lateral listhesis at L4-L5; Pelvic incidence: 40, Lumbar lordosis: 31, and Thoracic kyphosis: 17°.

Baseline (9.14.2021)	Day of first lumbar facet injections	1 month post first injection	3 months post first injection
Surgical consult: Surgery deemed high risk due to significant progression within past 5 years of scoliosis, vertebral rotation, kyphosis, lumbar hypermobility, OIT stiffness. Standing scoliosis x-ray/en → 10.1.	Begins PT 1 week before 4 level lumbar facet injections. Pain prior to injection: 6/10 at worst, 3/10 average. Limited in all regions. (L-reference 1-region).	Back to PT 1 week before 3 month. Thoughts: Opinion: routine 5.10 program. Pain overall improvement average 3/10 in general, a maximum of 4/10 pain.	Back to full active w/ increased activity with no equal advancement of L-SL.
6 months post first injection	**1 day post second facet facet injection**	**1 month post second injection**	
Lumbar's ROM= increased and functional +/- 1/10 pain.	Engineer of mobility. Pain reduction: 1/10 average, wants advancement to 2x/wk gym.	Lumbar Scoliosis in 1.0 degrees, is remains mild – no limitations.	



RESULTS

-B efore Intervention 9/10 on Visual Analog Scale
-3/10 pain during same day physical therapy
-Subsequent 2-week, 1 month and 3 months later she showed sustained qualitative and quantitative improvement

DISCUSSION

The results that we have obtained with our protocol of pairing diagnostic lumbar spine injections with concurrent PSSE represent a therapeutic option with improved pain relief, gait and balance, and QoL. Timing the injection allowed the patient to be more successful at PSSE which focused on realigning the sagittal plane placing less load on her spine and pelvis with longer pain relief, than either injection or PSSE alone.

This synergistic approach can serve as a valuable adjunct to conservative management. Our research provides proof-of-concept of an innovative new protocol involving a diagnostic spinal injection followed immediately by PSSE with a trained therapist, which can in turn provide further insights into managing pain and improving outcomes for patients with IS.

References

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