

# FEASIBILITY OF LUMBAR PERI-RADICULAR AND MEDIAL BRANCH BLOCK THROUGH MID LATERAL INTER-TRANSVERSE LIGAMENT NEEDLE PLACEMENT

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## INTRODUCTION

Nerve root pricking and intra-vascular injection during Kambin's triangle and subpedicular approaches of Lumbar Transforaminal Epidural Injection, are common (1). Furthermore, artery spasm, is known to be related to needle-artery contact or intra-vascular injections.

The aim of the study was to assess whether an iodine contrast injection of local anaesthetics and dexamethasone at the level of the mid L4-L5 or L5-S1 inter-transverse ligament (fig 1), allows its diffusion to peri-radicular areas.

This would minimize the chances of the described complications.

## CLINICAL CASES

In two patients with L4-5 and L5-S1 bilateral symptomatic spinal stenosis respectively, needles were placed in three different positions under CT scan: 1) at the posterior mid-level of the L4 transverse process and both 2) superficially and 3) deep into the inter-transverse ligament (ITL) of L4-5 and L5-S1. A 3cc iodine contrast solution was administered along with 7 cc of 0.125% bupivacaine with 2 mg of dexamethasone at each site.

CT-3D contrast segmentation was performed to analyse injectate diffusion.

## RESULTS

In both needle positions (L4-5 and L5-S1) deep into the inter-transverse ligament, the solution reached both peri-radicular L4 and L5 areas (fig 2).

Injectable solution spread mainly to posterior areas, including medial and lateral branches, when needle was placed posterior to the inter-transverse ligament or superficial to the transverse process (fig 3).

## CONCLUSIONS

1. Contrast diffusion was sufficient to achieve a periradicular block with hardly any retrograde diffusion when administered deep into the inter-transvers ligament.
2. This new technique may offer advantages and decrease the risk of complications related to periradicular block either by decreasing the probability of direct nerve damage, intravascular injection or arterial spasm.

1. Park JW, et al. Triangle Approach of Lumbar Transforaminal Epidural Injection with Spinal Stenosis. Ann Rehabil Med. 2011 Dec;35(6):833-43.

Figure 1: Inter-transverse ligament and its anatomical relationships

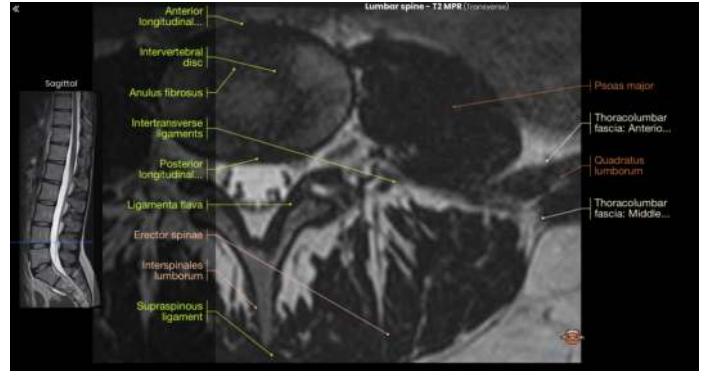


Figure 2. Spread of the injectate reaches right L4 root and L5 bilaterally

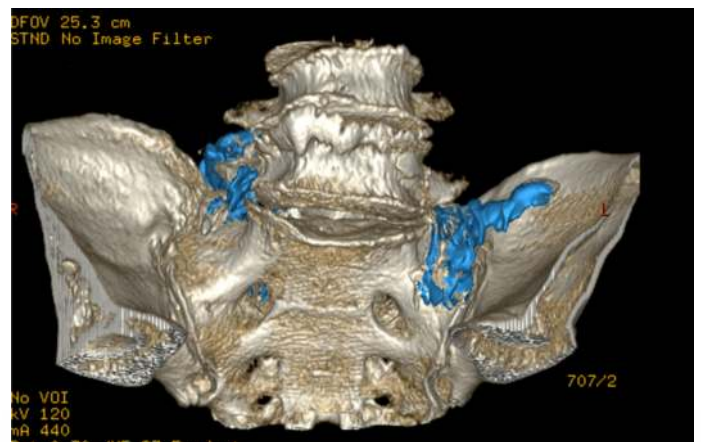


Figure 2. Only posterior spread is seen when injected posterior to the ITL

