



APPROACH TO LUMBAR TRANSFORAMINAL BLOCK

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ABSTRACT

Transforaminal Block is one the new and novel strategy for patients suffering from low back pain .

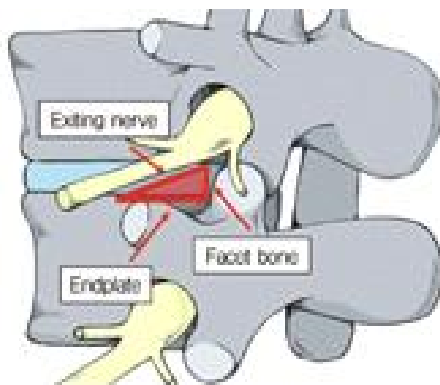
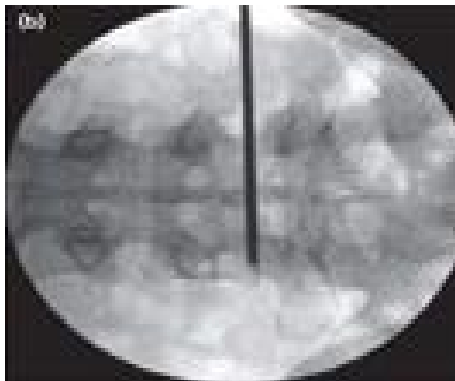
The drug cocktail is prepared and is injected into the Kambin Triangle. Transforaminal nerve root block (TFNRB) is a precise local injection technique used to target a particular inflamed nerve root that causes lumbar radiculopathy for diagnostic and therapeutic purposes. Lumbar radiculopathy is characterized by radiating lower extremity pain following specific dermatomal patterns, typically resulting from nerve root compression or inflammation. While its management includes conservative treatment as the first line of treatment, conservative treatments often fail, necessitating alternative interventions such as TFNRB and other invasive operative interventions.

KEYWORDS : Transforaminal Block , Low Back Pain, Kambin Triangle, Disc Herniation .

INTRODUCTION

Lumbar transforaminal epidural injection of steroids (LTFIS) or transforaminal epidural steroid injection (TFESI) is a technique optimizing the therapeutic effect by precisely delivering corticosteroids near the dorsal root ganglion (DRG) and nerve root under radiological guidance^{1,2}. Transforaminal nerve root block (TFNRB) is a targeted local injection procedure near the inflamed nerve root causing lumbar radiculopathy that can be used both for diagnostic and therapeutic purposes³. A combination of a local anesthetic and a steroid is injected around the affected nerve root under imaging guidance for therapeutic purposes, whereas for diagnostic purposes, only the local anesthetic is injected. If immediate relief of pain occurs, the targeted nerve root is the cause of pain; otherwise, an alternative source must be the root cause of pain⁴. Several authors have proposed TFNRB as a valuable modality for both diagnostic and therapeutic purposes⁵.

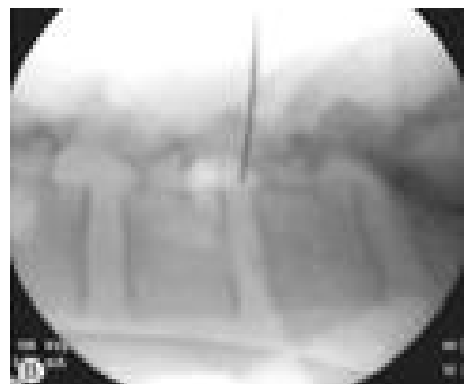
KAMBIN TRIANGLE

Image 1- Kambin Triangle⁶

Materials Required: 22-gauge spinal needle, local anaesthetic, 2% lignocaine and 0.5% bupivacaine, Triamcinolone acetonide (40mg), Radio Opaque contrast media, Iohexol.

Approach: The patient is placed prone on the fluoroscopy table, and the affected area exposed down to mid-buttock. Take the AP image with the spinous process exactly in midline. The end plate of the target vertebral body by craniocaudal tilt of the image intensifier. For upper lumbar vertebra, move the image intensifier caudally and for lower vertebra move the image intensifier cranially. For the Kambin's approach, ipsilateral oblique tilt till the facet joint is at the middle of the disc level is required. Local anesthetic (2ml /2% lignocaine) is infiltrated around 8-10 cm lateral to the midline on the affected side after localizing the level of pathology under fluoroscopic guidance. A 22 gauge spinal needle is then introduced through the anaesthetized skin to posterior surface of the vertebral body. 0.5 ml of iohexol dye is then introduced and re-aspiration done to rule out vascular injection. Flow of dye along with spread of dye in the epidural space is noted. Premixed 1ml/0.5% bupivacaine + 1ml/40 mg of triamcinolone + 1ml/2% lignocaine + 0.5ml Iohexol dye injection is then introduced and re aspirated to rule out vascular injection. Needles are then withdrawn sequentially and sterile dressing is done.

Image 1- Fluoroscopy Images Showing Needle Placement



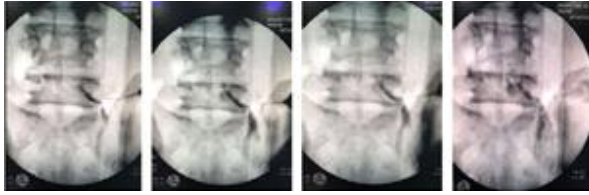
FLOW OF DYE IN EPIDURAL SPACE

S shaped- along the nerve root pathway- Ideal – drug given. Geographic pattern- suspect vascular injection- abandon the procedure. Dye settles as linear shadow in lateral view – suspect intrathecal injection- adjust the needle abandon the procedure. If the dye was found to traverse the nerve root pathway, the position of the needle was confirmed and drug injected. If the dye was found to traverse a different path or geographic pattern the needle is withdrawn and procedure is repeated with fine fluoroscopic adjustments. Still if the dye is

MATERIALS AND APPROACH

found to follow a different path, accidental vascular injection of dye should be suspected and procedure will be abandoned.

Image 2 – Showing flow of drug in epidural space



PRECAUTIONS

1. Should always be done under fluoroscopy guidance
2. Always check for intra-arterial injection
3. Always confirm sensitivity to local anesthetic , steroid and dye
4. Post operative neurological monitoring to be carried out

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