Description of Optimal Angle of Needle Insertion For L5 Transforaminal Epidural Injection Leads to Complications

RE: Ra IH, Min WK. Optimal angle of needle insertion for fluoroscopy-guided transforaminal epidural injection of L5. Pain Pract. 2015;15:393-399.

To the Editor:

Ra and Min (1) painstakingly have described the optimal angle of needle insertion for fluoroscopically guided transforaminal epidural injection of L5. Unfortunately, this potentially increases further complications related to lumbar transforaminal epidural injections with the safe triangle approach (2).Clearly, the literature undeniably shows that the safe triangle approach may not be safe and with particulate steroids, may be implicated in almost all cases of paraplegia related to transforaminal epidural steroid injections in the lumbar region (3-5).Consequently, alternate infraneural approaches have been described (3-7) with generally similar outcomes (6-8); but, potentially dramatic reductions in complications. The authors also have quoted the Kambin triangle along with literature on the location of radicular arteries at L5, without taking the risks into consideration with the described approach. The authors imply that since the artery of Adamkiewicz usually present above level L2 and L3, it is safe to perform safe triangle technique below those levels. However in the rarely reported cases of paralysis from transforaminal epidurals, 3 cases were noted at L4 level along with 2 cases at L5 level and 1 case even as low as S1 level (3).The transforaminal approach and ventral filling appears to have become a technique which continues to evolve. No significant evidence currently exists that transforaminal epidural injections infraneurally or supraneurally are more effective than interlaminar epidural injections or caudal epidural injections (9,10). Further, there is also no significant evidence that particulate steroids or non-particulate steroids provide significantly better improvement over local anesthetics.11 Other high-risk procedures related to ventral epidural filling also have been proposed (12), e.g., entering the epidural space interlaminarly and reaching the superior triangle with the highest distribution of radicular arteries.

When considering safety, guidelines, investigators, and publishers should be conscious of these risk factors and try to avoid transforaminal epidural injections by alternate approaches related to needle placement, use of blunt needles, administration of non-particulate solutions, and finally, utilizing either caudal or interlaminar approaches when feasible.

Laxmaiah Manchikanti, MD
Clinical Professor
Anesthesiology and Perioperative Medicine
University of Louisville
Louisville, Kentucky
Medical Director
Pain Management Center of Paducah
2831 Lone Oak Road
Paducah, KY 42003
E-mail: drlm@thepainmd.com

Sairam Atluri, MD
Medical Director
Tri-State Spine Care Institute
Cincinnati, OH
E-mail: saiatluri@gmail.com

Ramsin Benyamin, MD
Medical Director
Millennium Pain Center
Bloomington, IL
Clinical Assistant Professor of Surgery
College of Medicine
University of Illinois
Urbana-Champaign, IL
E-mail: ramsinbenyamin@yahoo.com

Alan David Kaye, MD, PhD
Professor and Chair
Department of Anesthesia
LSU Health Science Center
New Orleans, LA
E-mail: akaye@lsuhsc.edu

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