INTRODUCTION: Painful spine disorders are among the most common and costly medical complaints, and spine injections under fluoroscopic guidance are some of the most frequently performed medical procedures. There are not universally accepted methods of fluoroscopy use, and most common techniques have significant disadvantages: For example, patient positioning for traditional approaches of certain injections is awkward and painful, and lateral view is often blocked due to shoulders, ribs, or body habitus, and so accurate assessment of needle tip is often not possible. Knowing the needle depth and position is crucial for proper performance of the procedure, for accurate medication placement, and to prevent potential injury, such as trauma to the spinal cord. Furthermore, ligamentum flavum is often not reliable as a sole landmark for the common loss of resistance or hanging drop techniques.

OBJECTIVE: In this technical report, we describe the use of orthogonal oblique views, also known as “contralateral oblique”; a method that aids in viewing a distinct, robust landmark, the spinolaminar line. We further describe a completely novel technique of transforaminal injections using oblique orthogonal views.

METHODS: This technical report uses selected cross-sectional spine images (MRI and CT) and intra-procedure fluoroscopic images of spine injections to describe the method of orthogonal oblique fluoroscopy for spine injections. Anatomy and rationale for use of this novel approach are described.

RESULTS/ CONCLUSION: This technical report describes and illustrates in detail the use of orthogonal oblique fluoroscopy views in the performance of spine injections. Innovative methods are described for identifying the spinolaminar line and for identifying the target foramen in transforaminal injections. This approach is applicable for all levels of spine injections, including cervical, thoracic and lumbosacral. Orthogonal oblique fluoroscopy may increase accuracy and safety of spine injections by facilitating more precise medication placement, increased patient comfort, shortened procedure times, and reduced radiation exposure.

REFERENCES: