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QUESTION

WHAT IS THE DIFFERENCE BETWEEN A POSTERIOR LUMBAR INTERBODY FUSION VERSUS A TRANSFORAMINAL INTERBODY FUSION?

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First let's discuss the similarities. Both posterior lumbar interbody fusion (PLIF) and transforaminal interbody fusion (TLIF) approach the intervertebral disc space through a posterior spinal approach; this is in contrast to an anterior lumbar interbody fusion (ALIF). They are both typically done in addition to a posterior lumbar decompression and instrumented fusion. PLIF and TLIF, although performed for a variety of clinical indications, are surgical techniques with a common goal of improving spinal fusion rates.¹ In addition, they can be used to restore disc space height, improve sagittal balance, and indirectly decompress the neural foramen.²

The primary difference between the two procedures is the path of access to the intervertebral disc space (Figure 12-1). The PLIF procedure involves working in the interlaminar space with retraction of the traversing nerve root and dura to gain access to the disc space. This is typically performed on both sides of the dura with placement of a structural interbody spacer as well as bone graft. The TLIF procedure is performed through the foramen of the symptomatic side. This technique involves resection of the cranial facet as well as portions of the caudal facet articulation. After cauterization of the epidural veins, the intervertebral disc can be accessed. The TLIF approach does not require retraction of the traversing nerve root, the exiting nerve root, or the dura. In addition, a TLIF is typically performed unilaterally with the placement of a structural interbody spacer and bone graft.

A disadvantage of the PLIF technique is that it involves more significant retraction on the neural structures than TLIF. As such, neural injury, radicular pain, and dural injury have been reported more frequently with a PLIF than a TLIF.^{3,4} However, there are no studies directly comparing the two procedures. In addition, there have been no reported differences in fusion or functional outcomes. Given the potential risks associated with dural retraction, I prefer to perform a TLIF in situations where I feel that posterior interbody fusion is needed (Figures 12-2 and 12-3).