Posterolateral versus posterior interbody fusion in isthmic spondylolisthesis.

Farrokh MR, Rahmanian A, Masoudi MS.

Neurosurgery Department, Shiraz Neurosciences Research Center, Shiraz University of Medical Sciences, Shiraz, Iran. farrokhimr@yahoo.com

Abstract

Spondylolisthesis is a heterogeneous disorder characterized by subluxation of a vertebral body over another in the sagittal plane. Its most common form is isthmic spondylolisthesis (IS). This study aims to compare clinical outcomes of posterolateral fusion (PLF) with posterior lumbar interbody fusion (PLIF) with posterior instrumentation in the treatment of IS. We performed a randomized prospective study in which 80 patients out of a total of 85 patients with IS were randomly allocated to one of two groups: PLF with posterior instrumentation (group I) or PLIF with posterior instrumentation (group II). Posterior decompression was performed in the patients. The Oswestry low back pain disability (OLBP) scale and Visual Analogue Scale (VAS) were used to evaluate the quality of life (QoL) and pain, respectively. Fisher's exact test was used to evaluate fusion rate and the Mann-Whitney U test was used to compare categorical data. Fusion in group II was significantly better than in group I (p=0.012). Improvement in low back pain was statistically more significant in group I (p=0.001). The incidence of neurogenic claudication was significantly lower in group I than in group II (p=0.004). In group I, there was no significant correlation between slip Meyerding grade and disc space height, radicular pain, and low back pain. There was no significant difference in post-operative complications at 1-year follow-up. Our data showed that PLF with posterior instrumentation provides better clinical outcomes and more improvement in low back pain compared to PLIF with posterior instrumentation despite the low fusion rate.