Direct lateral interbody fusion (DLIF)

Few studies have reported direct comparative data of lumbar spine angles between direct lateral interbody fusion (DLIF) and oblique lateral interbody fusion (OLIF). The purpose of the study of Ko et al., was to investigate the clinical and radiological outcomes of DLIF and OLIF, and determine influential factors.

The same surgeon performed DLIF from May 2011 to August 2014 (n=201) and OLIF from September 2014 to September 2016 (n=142). Radiological parameters, cage height, cage angle (CA), cage width (CW), and cage location were assessed. They checked the cage location as the distance (mm) from the anterior margin of the disc space to the anterior metallic indicator of the cage in lateral images.

There were significant differences in intervertebral foramen height (FH; 22.0±2.4 vs. 21.0±2.1 mm, p<0.001) and sagittal disc angle (SDA; 8.7±3.3 vs. 11.3±3.2˚, p<0.001) between the DLIF and OLIF groups at 7 days postoperatively. CA (9.6±3.0 vs. 8.1±2.9˚, p<0.001) and CW (21.2±1.6 vs. 19.2±1.9 mm, p<0.001) were significantly larger in the OLIF group compared to the DLIF group. The cage location of the OLIF group was significantly more anterior than the DLIF group (6.7±3.0 vs. 9.1±3.6 mm, p<0.001). Cage subsidence at 1 year postoperatively was significantly worse in the DLIF group compared to the OLIF group (1.0±1.5 vs. 0.4±1.1 mm, p=0.001). Cage location was significantly correlated with postoperative FH (β=0.273, p<0.001) and postoperative SDA (β=-0.358, p<0.001). CA was significantly correlated with postoperative FH (β=-0.139, p=0.044) and postoperative SDA (β=0.236, p=0.001). Cage location (β=0.293, p<0.001) and CW (β=-0.225, p<0.001) were significantly correlated with cage subsidence.

The cage location, CA, and CW seem to be important factors which result in the different-radiological outcomes between DLIF and OLIF [1].

1)
Ko MJ, Park SW, Kim YB. Effect of Cage in Radiological Differences between Direct and Oblique Lateral Interbody Fusion Techniques. J Korean Neurosurg Soc. 2019 May 8. doi: 10.3340/jkns.2018.0142. [Epub ahead of print] PubMed PMID: 31064045.