Hiyama et al. examined the ability of the extreme lateral interbody fusion (XLIF) procedure to restore coronal and sagittal alignments for patients with adult spinal deformity (ASD) using computed tomography multiplanar reconstruction (CT-MPR). Thirty-eight patients with ASD undergoing correction and fixation with XLIF at 114 levels were studied. The coronal segmental Cobb angle, coronal regional Cobb angle (L1-5), sagittal segmental Cobb angle, sagittal regional Cobb angle (L1-5), intervertebral disc height and, vertebral body rotation (VBR) were measured before and after of XLIF surgery using CT-MPR. The mean sagittal segmental Cobb angle, the coronal segmental Cobb angle, and VBR were corrected from 5.0° to 9.0°, from 6.3° to 4.3° and from 12.2° to 10.8°, respectively. The mean of the intervertebral disc heights increased significantly from 6.0 mm to 10.4 mm postoperatively. Although increases in coronal segmental Cobb, sagittal segmental Cobb, and intervertebral disc height at each level were significant, there were no significant differences in each parameter acquired by spine levels. The results also showed that it was difficult for L4/5 level to obtain the most postoperative coronal Cobb, sagittal Cobb and intervertebral disc height. This study evaluated the alignment improvement effect of stand-alone XLIF in ASD patients using CT-MPR. For the lower lumbar spine, it is difficult to obtain a lordosis more than 10 degrees with stand-alone XLIF for correcting ASD. Therefore, it is thought that correction such as osteotomy or compression technique to the posterior fusion may be necessary during the 2nd stage surgery [1)].

1)
Hiyama A, Katoh H, Sakai D, Sato M, Tanaka M, Nukaga T, Watanabe M. Changes in Spinal Alignment following eXtreme Lateral Interbody Fusion Alone in Patients with Adult Spinal Deformity using Computed Tomography. Sci Rep. 2019 Aug 19;9(1):12039. doi: 10.1038/s41598-019-48539-w. PubMed PMID: 31427641; PubMed Central PMCID: PMC6700163.