



**Supplementary Fig. 4.** Alterations of radiological parameters (superior articular distance [SAD], lateral recess [LR] angle and lateral recess height) measured from the ipsilateral side of the operation area. (A) Ipsilateral SAD. (B) Ipsilateral LR angle. (C) Ipsilateral LR height. UBELD, unilateral biportal endoscopic lumbar decompression; MEL, microendoscopic laminotomy; PELD, percutaneous endoscopic lumbar decompression; Preop., preoperative; Postop., postoperative.