



**Supplementary Fig. 2.** Flexion (A) and extension (B). Digital plain radiographic images are used to determine the movement at the level of spondylolisthesis ( $3.76^\circ$  motion in this case). (C) Disc height was gauged based on preoperative lumbar computed tomography scans by applying a midsagittal image and identifying the gap from the midpoint of the endplate at the level of the spondylolisthesis. (D) The facet angle was measured by calculating the angle generated by linking the 2 endpoints of each facet on a preoperative axial lumbar computed tomography (midcut through the disc) and a line linking the 2 dorsal points of each facet joint. When the facet angles were different (right side vs. left side), the average value was applied ( $69.5^\circ$  in this example).