



## **TITLE: CIRCUMFERENTIAL BONE FUSION IN ADULT SPINAL DEFORMITY VIA COMBINATION OF OBLIQUE LATERAL INTERBODY FUSION AND GRADE 2 POSTERIOR COLUMN OSTEOTOMY**

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### **ABSTRACT (up to 300 words)**

**Background:** The combination of oblique lateral interbody fusion (OLIF) with grade 2 posterior column osteotomy (PCO) is an effective treatment for adult spinal deformity. However, grade 2 PCO may lead to pseudoarthrosis because it involves complete removal of the bilateral posterior facet joints.

**Objectives:** To determine the achievement rate of anterior and posterolateral fusion resulting in circumferential fusion in patients who underwent combined OLIF and grade 2 PCO.

**Methods:** Retrospective study of patients who underwent OLIF and grade 2 PCO. The group comprised a long fusion group, with fusion from the thoracic level to the ilium, and a short fusion group, with fusion within the lumbar region. The OLIF with percutaneous pedicle screw insertion group was also used for reference. The Brantigan–Steffee–Fraser classification was used to assess interbody fusion and Lenke classification for assessment of posterolateral fusion.

**Results:** Sixty-six patients with 109 lumbar levels were included in the study. We observed 100% anterior fusion in all 3 groups. The fusion rate for posterolateral fusion between the OLIF-grade 2 PCO group was 97%, with very low (3%) non-circumferential fusion (pseudoarthrosis only at the osteotomy site). In most cases, solid posterolateral fusions (Lenke A) occurred within 24 months.

**Conclusions:** The combination of OLIF and grade 2 PCO resulted in circumferential fusion for most (97%) of the cases within 24 months. OLIF and grade 2 PCO are considered a good combination treatment to achieve sufficient lumbar lordosis and solid bone fusion

### **BIOGRAPHY (up to 200 words)**

Dr Amir Fariz is an orthopaedic spine surgeon based in Malaysia. He had pursued fellowship in spine surgery in Japan. He now is the head of spine unit Hospital Sg Buloh. He is an active member of Malaysia Spine Society and have participated in many spine workshop local and abroad as speaker or trainer.

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