

# RADIOLOGICAL ASSESSMENT OF POST- OPERATIVE SLIP PERCENTAGE AND SLIP ANGLE OF SPONDYLOLYTIC LISTHESIS AFTER POSTERIOR LUMBAR INTERBODY FUSION

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## Introduction

Lumbar spondylolisthesis is a common spinal condition in adults. The cranial vertebra sliding over the caudal one causes changes in the morphology of the neural foramen. Low back pain is the common presentation with or without radiculopathy mostly at L4-5 and L5-S1.

Wiltse and Newman classification: is the most practical and most widely accepted classification. including degenerative, isthmic, dysplastic, traumatic and pathologic.

Isthmic (spondylolytic) Spondylolysis is a condition where there is defect in the pars interarticularis. A unilateral or bilateral, which commonly occurs at L4 or L5 vertebrae.

Non operative treatment is mainly conserved for those with no or mild neurologic complains, no spinal deformities nor gait abnormalities. And when low back pain is the predominant presentation. However some patients will ultimately require surgical intervention. Accepted indications for surgery include persistent or intolerable leg or back pain, progressive deformity (unusual in adults), worsening neurologic symptoms including foot drop and bowel or bladder dysfunction.

## METHODS:

*All our patients were subjected to thorough clinical and radiological examination including:*

**1-Clinical evaluation:** Patient data: name, age, sex, occupation, address and telephone number.

**2- Radiological evaluation:**

Radiologic assessment of all our patients was done using the following techniques.

A) Plain x-rays: Antero-posterior view, Lateral views, Functional (Dynamic) views

B) Magnetic resonance imaging: This was done to assess condition of the neural and discal tissues.

C) Computed tomography (CT scan)

## Results

**A) Slip angle:** With regards to the slip angle; pre-operatively the slip angle ranged from  $+4^{\circ}$  to  $-20^{\circ}$ , with a mean of  $-7.75^{\circ} \pm 7.966^{\circ}$ , while post-operatively the slip angle ranged from  $+10^{\circ}$  to  $-18^{\circ}$  with a mean of  $3.45^{\circ} \pm 6.21^{\circ}$ .

**B) Slip percent:** The mean preoperative percentage slip was  $31.25 \pm 13.28\%$ , while the mean post-operative percentage slip was  $10.55 \pm 9.864\%$ .

## Aim of the work

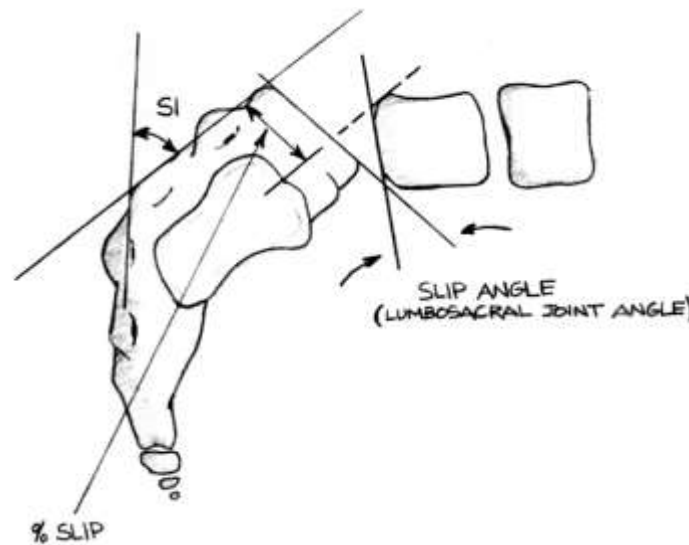
The aim of the work was radiological assessment of post-operative slip percentage and slip angle of Spondylolytic listhesis cases after posterior lumbar interbody fusion through retrospective evaluation.

## Patients and Methods

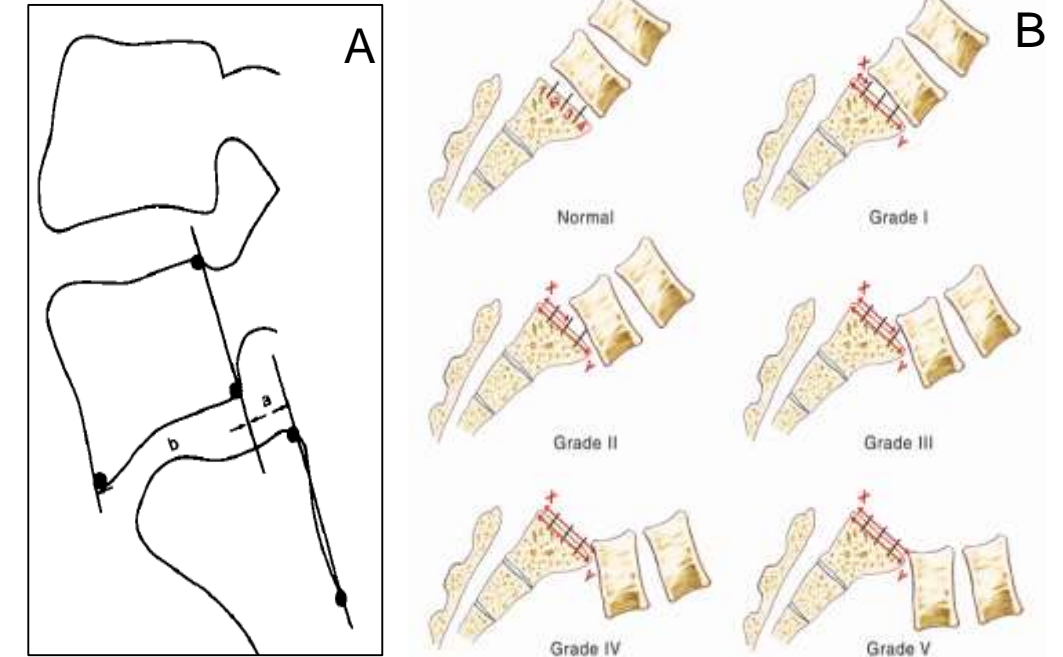
### PATIENTS:

This study included 20 adult patients suffering from symptomatic lumbar and /or lumbosacral spondylolytic listhesis of varying grades and were treated in spine unit , Al-Hadra University Hospital.

Patients included in our study suffered from single level spondylolytic listhesis of grades I and II according to the Meyerding grading system. These patients were considered and indicated for surgical treatment due to failure of conservative treatment 6 months, or they presented initially with neurological deficits.



**Figure 1:** Drawing of the lumbosacral spine showing slip angle and slip percent



**Figure 2:**  
A): slip percentage  
B): Meyerding grading

## Conclusion

- PLIF technique showed improvement of slip angle and slip percentage when compared to preoperative data.