

Dynamic Stabilization device fails to prevent adjacent segment disease Robert Michael Galler DO; Kaveh Moghbeli BS Department of Neurological Surgery Stony Brook Medicine, Long Island NY



#### Introduction

Posterior dynamic stabilization systems have been put forth as alternatives or adjuncts to lumbar fusion that decrease the development of adjacent segment disease. By reducing the load on adjacent discs and preserving adjacent segmental motion, the intention of these systems is to halt or delay the degeneration of adjacent segments. We present data from three patients treated for lumbar spondylolisthesis and followed after posterior fusion and dynamic stabilization of the lumbar spine using the Agile dynamic stabilization device.

### Methods

Four patients who underwent posterior fusion and dynamic stabilization were treated. MRIs were obtained preoperatively and plain-film radiographs obtained at on week, one months six months and one to five years post-operatively for each. Imaging findings were analyzed for degenerative changes in the non-

## Results

Four patients who underwent lumbar decompression and instrumented fixation and fusion utilizing a dynamic stabilizing system were followed. Each of the patients re-presented with symptoms of neurogenic claudication and radiculopathy postoperatively after at least 1 year period of improvement. Imaging was was performed in each. X-Ray revealed fusion at the rigid instrumented levels with the dynamic bumper in tact. There was no physical failure of the implant. The adjacent levels to the fusion at the level of the agile bumper and above developed degenerative changes consistent with adjacent segment degeneration. Two patients elected to undergo revision surgery with improvement of symptoms. The remaining two were managed conservatively. The two patients with imaging for this presentation were followed 3 (figures 1 and 2) and 5 years (figures 3 and 4) respectively.



Grade 1 spondylolisthesis at L4-5 an severe stenosis L3-5

#### Postoperative Xray



Robust fusion below dynamic stabilizer. Bumper device in tact.

#### Postoperative MRI



Adjacent segment degeneration at L1-2

# Conclusions

Our case series seems to indicate that the Agile dynamic stabilization device fails to prevent adjacent segment degeneration when used as an adjunct in posterior fusion of the lumbar spine for the indication of stenosis and spondylolisthesis.

## Learning Objectives

The reader will consider the importance of adjacent segment degeneration and one strategy that was considered to prevent it.