



## Instrumentation Failure in 1110 PLIF Cases

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### Introduction

Although posterior lumbar interbody fusion (PLIF) has been very useful for degenerative lumbar disease, various complications have been reported. I report my instrumentation failure cases in PLIF cases to determine the incidence and etiology of hardware complications.

### Methods

Between 1997 and 2014, I performed PLIF using cages on 1110 consecutive cases with (791 cases) or without (319 cases) pedicle screw systems for degenerative lumbar disease. These patients included 638 males (Mean age 53.6: 16-87yrs) and 472 females (Mean age 59.0: 17-88yrs). There were implanted 485 patients at 1-level, 497 at 2-level, 109 at 3-level, 11 at 4-level and 1 at 5-level. Artificial bone paste was used in 400 cases.

### Results

Each one with new-onset radiculopathy of 6 patients had subsidence of box-type cages and of 3 patients had retropulsion of box-type cages needed additional operation. On the other hand, all 5 patients who had migration of cages following the collapse of the vertebral body had severe symptoms and needed immediately surgery. Three of them had stand-alone PLIF with cylindrical cages. Furthermore, two out of three had surgery before PLIF. One needed re-operation for pedicle screw malposition. Fracture of pedicle screws was shown after bone union has achieved in 1 patient. There was only one pseudoarthrosis in the collapse of the L5 vertebral body after L2-5 PLIF. Of 1110 PLIF, instrumentation failure occurred in 16 cases, yielding an overall incidence of 1.4%.

### Conclusions

Although a box-type cage is inserted easier than cylindrical one, it causes subsidence and retropulsion easily. It is important to use a larger cage to avoid retropulsion of cages. In addition, artificial bone paste may have to be used in patients with osteoporosis to prevent from the migration of cages following the collapse of the vertebral body.

### Learning Objectives

To understand the incidence and etiology of hardware complications in PLIF.

### References