

Factors Influencing Early Subsidence Following Lateral Access Lumbar Interbody Fusion

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Objective

Early subsidence of lateral access cages can potentially lead to loss of indirect decompression and recurrence of symptoms. We intend to identify the risk factors leading to such early cage subsidence following posterior stabilized lateral lumbar interbody fusion surgery

Methods

Medical records of patients who underwent single or multi-level lateral access lumbar interbody fusion were retrospectively reviewed and each cage level was analysed independently. Cage levels that demonstrated signs of intraoperative subsidence were excluded. Furthermore, only those levels displaying parallel endplates in all follow-up lateral view x-rays were selected for further analysis. Preoperative and post-operative follow-up radiographs were used to measure the anterior disc height (ADH), posterior disc height (PDH), mean disc height (MDH), disc space angle (DSA) and segmental angle (SA). Correlation between subsidence and factors including age, construct length, pre-op lordosis, post-op lordosis, disc height, cage dimensions and cage position was analysed.

Results

A total of 56 patients with 102 cage levels were reviewed. Only thirty-seven patients (Age: 62 +10.2 years) with 72 cage levels satisfied our selection criteria. On independent analysis of each cage level, we noticed that lateral interbody cages significantly increased ($p < 6$ months) was 19.4 %. Factors that positively correlated with early subsidence were post-operative increase in ADH ($p = 0.018$), PDH (p

Conclusion

Excessive post-operative increase in disc height was found to be an independent risk factor influencing occurrence of early subsidence. Therefore, achieving an optimal disc height rather than over correction, is an important surgical strategy to be adopted while placement of lateral access cages. We also advocate adequate posterior decompression when there is a risk of early subsidence, thus reducing the chances of recurrent symptoms.