

單一鋁金屬支架 TM-500，使用在經椎孔椎體間骨融合術的臨床報告
Outcome Evaluation of Transforminal Lumbar Interbody Fusion with single TM-500 cage

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Introduction: Porous tantalum material has good performance in interbody fusion due to its excellent biomaterial effect. However, the semilunate tantalum cage(TM-300) manufactured for TLIF was all designed for the western people, and the size seems to be bigger than the Asian requirement. This may cause our difficulty to perform the interbody fusion and causing more complications during the procedure. We had modified the operation through performing TLIF with single tantalum cage(TM-500) for PLIF. The purpose of the study is to check its efficacy and feasibility through outcome evaluation.

Materials and Methods: We had retrospectively review 76 patients who underwent TLIF with single PLIF tantalum cage filled with morselized bone graft from June 2010 until Sept. 2011. All the patients were followed up for at least 4 month (4 months to 18 months). The peri-operative data, visual analogue scale (VAS) and Oswestry Disability Index (ODI) were recorded and assessed. The fusion rate was evaluated according to the Kim criteria using the radiological plain film.

Results: There are 76 patients (48 female and 28 male) with 89 segment of interbody fusion. The average age of patients is 61 years old. The average BMD is -1.1. The average hospitalization days are 7.6 days. The average operation time is 225 minutes. The average blood loss is 731ml. The difference of VAS change from pre-op and the last follow-up VAS is 6.26 (7.64 to 1.38) in back pain and 6.43(7.64 to 1.21) in leg pain. The average ODI score changes from 30.4 to 14.4 between pre-op evaluation and the last time we follow up. Among the 89 segments of interbody fusion of the 76 patients, only 7 interbody segments revealed non fusion or loosening of pedicle screws (7%). There is no complication of infection and nerve root damage. Posterior cage migration was noted in one case.

Discussion: The size of PLIF cage (TM-500) is smaller than the TLIF semi-lunate cage (TM-300), which is more suitable for Asian patients in the TLIF procedure. With smaller cage, we can finish the TLIF procedure more smoothly and reduce the complication rate. In the meanwhile, the fusion rate and clinical outcome were comparable to the traditional method. Single PLIF cage used in the TLIF procedure has the advantages of less complication rate, less expensive and same clinical results comparing to using bilateral PLIF cages or single TLIF cage in the study.

Conclusions:

Single PLIF cage(TM-500) for TLIF can be an alternative for Asian patients or patients with smaller size.