CLINICAL & RADILOGICAL OUTCOMES OF INTERFUSE S™, A NEW MODULAR PLIF, IN PATIENTS WITH LUMBAR DISC HERNIATION

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INTRODUCTION
One concern about posterolateral interbody fusion (PLIF) implants is the insufficient primary stability that impacts negatively on fusion rate, increases the chance of subsidence with loss of segmental lordosis. To avoid posterior migration, PLIF also needs to be supplemented with pedicle screws increasing the costs and the surgical complications. Recently, a novel modular PLIF assembled intraoperatively by a rail-and-slot design into the disc space, InterFuse S™, has become available. It can be inserted through the small annulus opening of a classical microdiscectomy, without further facet joint resection preventing the potential for post-operative instability. Once implanted, it provides the largest surface area for load-sharing even when compared to anteriorly inserted cages. The aim of this study is to evaluate the feasibility, safety and outcomes using stand-alone InterFuse S™. We hypothesized that the increased surface area can adequately promote fusion, segmental lordosis with good clinical results obviating the need to add transpedicular screws.

MATERIALS
Eight consecutive patients, 4 males and 4 females, with protruded lumbar disc herniation underwent PLIF with InterFuse S™. No pedicle screw fixation was performed. Median age was 36.3 years (range 22-46). All patients underwent a single-level procedure (7 patients at L5-S1, 1 patient at L4-5). The indications were protruded lumbar disc herniation.

RESULTS
No surgical complications or neurological deficits were noted, as reflected in a mean hospitalization of 2.3 days. At 6 months FU, mean back VAS decreased from 7 to 2 (p<0.01) and leg pain resolved in all patients (p<0.01). A 100% rate of successful fusion was observed. No cases of implant subsidence or breakage were found. Segmental lordosis was observed in all patients. There was one case of posterior migration that conducted to revision surgery in an obese and heavy lifter patient.

CONCLUSIONS
Stand-alone PLIF with InterFuse S™ is a feasible and safe technique compared to conventional PLIF or TLIF in young patients with lumbar disc herniation, without compromising clinical and radiological outcomes. With a less invasive approach, adequate end-plate coverage was obtained with slight root traction and minimal facet joint resection, due to the small size of the single modules. A large footprint reduces the possibility of implant subsidence and migration even when used as a stand-alone implant without posterior stabilization.