



The Use of the Interfuse®, an Innovative Modular Intervertebral Body Fusion Device as a Less Invasive Alternative to the Conventional Bilateral Lumbar Intervertebral Fusion Systems

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Introduction

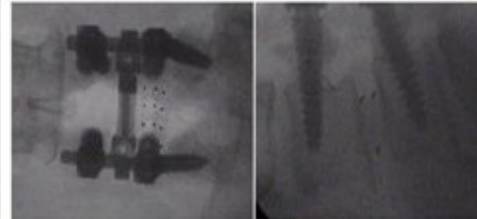
The Interfuse® Intervertebral Body Fusion is a modular system consisting of an integral rail and slot multi-segmental system, designed for use with autogenous bone graft, and with supplemental spinal fixation systems. This system allows the surgeon to customize the width of the device through a less invasive unilateral posterior lumbar interbody fusion, as opposed to conventional systems which typically come prepared in preset sizes.



Methods

We used the Interfuse® system in patients with degenerative disc disease and/or spondylolisthesis undergoing intervertebral lumbar spinal fusion. 23 consecutive patients undergoing interbody fusion were prospectively assessed, with pre-operative, intra-operative and post-operative variables being recorded. The most recent 11 patients had the Interfuse system implanted, whereas the previous 12 patients, with the same symptoms, underwent implantation of the conventional system. Outcome measures assessed included: intra-operative blood loss, operating time, hospital stay, BMI, pre- and post-operative pain scores, spondylolisthesis measurements both pre- and post-operatively, degrees of subsidence, and rates of fusion.

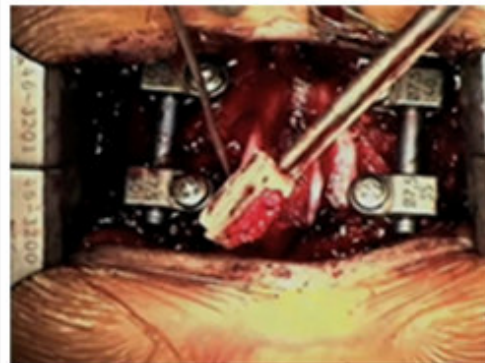
AP and Lateral Views of Five Modules In-Situ



(L) AP view of five modules in situ using Interfuse device (R) Lateral view of same.

Operative Movie

This short intraoperative movie highlights the benefits of using the less invasive Interfuse device system for intervertebral lumbar fusion.



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Standard Vs Interfuse Comparison

	Standard	Interfuse
Hospital Stay (days)	4.9	4.5
Operative Time (minutes)	180	181
Blood Loss (mls)	433	354
Body Mass Index	28.4	32.4
Pre-operative Spondylolisthesis (mm)	5.49	8.17
Post-op Spondylolisthesis (mm)	3.2	3.5
Reduction in Spondylolisthesis (%)	41.7	48.8
Mean Pre-operative VAS	6.3	5
Mean Post-operative VAS (at 6 weeks)	2.3	1.1

Results

Though the Interfuse® system was used on heavier patients, both the operative blood loss and the hospital stays were less. The Interfuse® system achieved a slightly better restoration in disc height, and a greater correction in spondylolisthesis, compared with those treated with a conventional fusion system. No increase in operating time was seen in the Interfuse® patient group, despite achieving a much larger interbody footprint, through a unilateral smaller disc space opening.

Conclusions

The Interfuse® is a viable flexible alternative to conventional PLIF in patients presenting with degenerative disc disease or spondylolisthesis, allowing a less invasive approach that does not compromise patient care or surgical efficiency, whilst also achieving placement of a significantly larger interbody footprint.