Integrated Interbody Cervical Fusion in One- and Two-level Constructs: Long-Term Clinical Outcomes

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Introduction

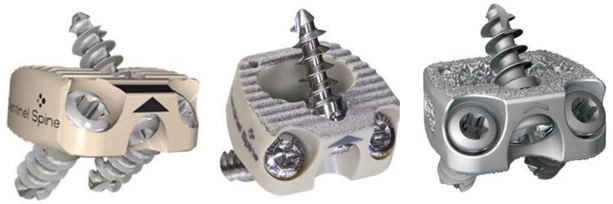
Alternatively to ACDF with a cervical plate, and quite possibly superior to plating, cervical integrated interbody fusions with subsequent compressive/lag fixation, has emerged as a promising alternative: smaller exposure, zero-anterior profile, individual, but multilevel-specific sagittal realignment.

Objectives

Retrospectively to evaluate patients treated from single-to-multiple levels with integrated interbody fusion.

Methods

- 142 patients with symptomatic DDD with radiculopathy and/or myelopathy were treated in 2011-2016 with a cervical integrated interbody fusion device with compressive fixation.
- 74 patients underwent the procedure at single-level, 68 patients at 2-level.
- The average age at time of surgery was 53.4±10.7 years.
- Patients were assessed pre- and post-operatively at 6 weeks, 3, 6, 12-months, then yearly and evaluated at 6-11 years follow-up for patient-derived outcome measures, radiographic parameters (effect on device-level lordosis, overall cervical sagittal alignment, fusion status), and device-related complications.
- Blood loss and hospital stay were evaluated.



The STALIF C and STALIF C-Ti devices are cleared for use with autograft or allograft at 1 or 2 contiguous levels from C2-T1

Case Example – 49yo, female, full-time employed

Preoperative images Postop AP and Lateral

Diagnosis:

Multi-level cervical spondylosis: C5-C6, C6-C7
Spinal canal stenosis
Bilateral severe neuroforaminal narrowing
Central disc protrusion C5-C6 with cord compression
Osteopenia

Surgical approach: Anterior cervical decompression

Results

- Blood loss was minimal and no intra-operative complications were recorded.
- Hospital stay was minimal with 84% of patients being released the same day.
- Radiographic results showed lordosis was maintained in the global spine and bone formation was present in the inner column of the device.
- Overall fusion rate was 92%.
- The revision surgery patients showed better alignment than pre-operatively with static plates.
- At 6 months, none of the patients reported chronic dysphagia.
- There were no device failures out to last follow-up.
- 86% of patients were able to return to the same-level of work as prior to surgery.

Conclusion

- For patients undergoing one- and two-level cervical fusion, integrated interbody fusion with compressive/lag fixation appears to be a viable alternative.
- The benefit of a lag design to provide better fixation and more accurate maintenance of the lordotic curve of the cervical spine was seen in this series.
- Patients reported they were well satisfied with their results and experienced significant pain relief.