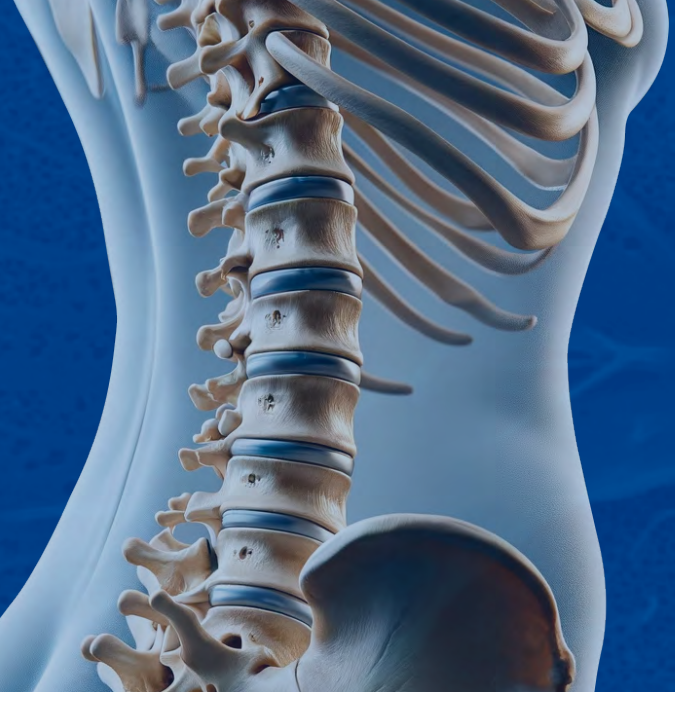


NANOVIS®

nanoVIS Ti™ Surface Technology Enhanced Spinal Fusion Devices for Bone Growth

Case Presentation: L4-5 spondylosis, L4-L5 stenosis, L4-L5 TLIF with Pedicle Screw Fixation
Nano FortiFix™ and Nano FortiCore™ Spinal Instrumentation

CASE HIGHLIGHTS

- 1-LEVEL TLIF
- CENTRAL AND FORAMINAL STENOSIS
- SPONDYLOSIS
- NANOTECHNOLOGY-ENHANCED FUSION DEVICES FOR BONE GROWTH UTILIZED IN BOTH ANTERIOR AND POSTERIOR COLUMNS

Surgeon Profile

Douglas Pahl, MD

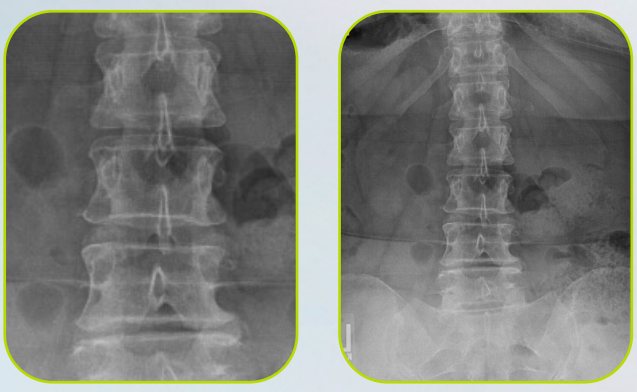
Hughston Spine at The Hughston Clinic

Columbus, Georgia

Clinical Presentation

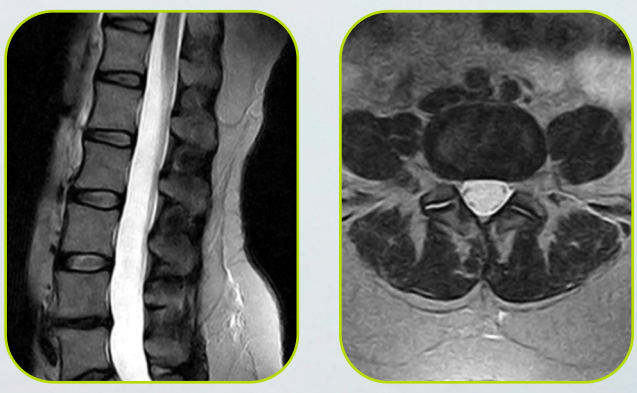
A 51-year-old female PE teacher/coach presented in my clinic with a two-year history of low back pain, bilateral lower extremity pain with radiculopathy, and intractable/refractory leg pain. The Oswestry Disability Index score was 56, and pain as measured on the Visual Analog Scale was 6/10. The patient failed conservative treatments trying physical therapy, NSAIDS, epidural steroid injections, and pain management. Quality of life and her ability to perform job duties had all been compromised.

PRE-OP LATERAL AND A/P X-RAYS



NOTED L4-L5 DISC SPACE COLLAPSE

PRE-OP SAGITTAL AND AXIAL MRI



NOTED CENTRAL CANAL STENOSIS AND RIGHT NERVE ROOT COMPRESSION

Surgical Procedure

The patient consented for a 1-level TLIF at L4-L5 with pedicle screw instrumentation. Autograft was morselized and placed in the graft chambers of the interbody fusion device, along with a small dose of Infuse. Pedicle screws were placed bilaterally from L4-L5 without the use of robotics or navigation. Following nerve root decompression, a large footprint TLIF device was placed into the collapsed disc space and axially rotated into position, additionally decompressing the affected nerve. After implant positions were verified, hemostasis and wound closure were accomplished without incident.

Clinical Outcome

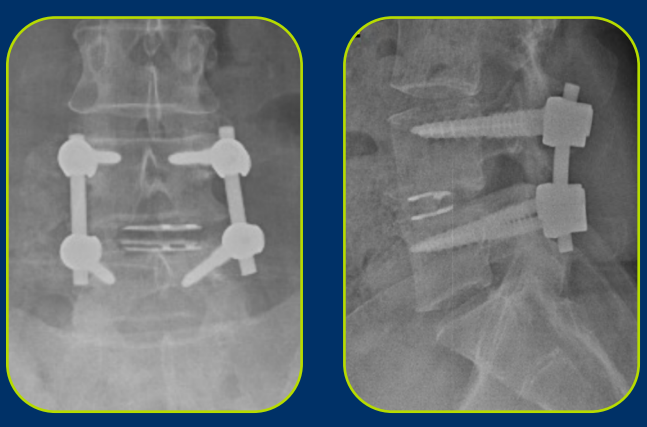
The patient is very happy with her clinical outcome and has resumed all normal activities without work restrictions. Her pain score as measured on VAS is down to 0 (zero). Her ODI which was 56 before surgery is also now 0 (zero). Copious bone formation in the interbody fusion site was observed at 1-year post-op on plain films. Mechanical stability in the anterior column due to fusion, as well as direct and indirect decompression, contributed to the patient having a full recovery and resolution of all preoperative symptoms.

Discussion

“While certain procedures may hold less risk in terms of potential negative outcomes, it is important to note that complications can occur in any patient unexpectedly. This reality highlights the importance of consistently accessing advanced technology with the potential to improve my patients’ chances for achieving excellent outcomes.

Since 2018, I have incorporated Nanovis surface technologies into my practice and have managed the full gamut of patient pre-operative co-morbidities and complications. From 1-level cervical fusions to multi-level lumbar revisions in patients with very poor bone quality, Nanovis’ proprietary nanotube technology has worked very well in my practice with no known implant failures with over 1200 nanotechnology-enhanced implants in patients to date. While it may be tempting to reserve its use solely for complex or high-risk cases, I have chosen to implant their technology consistently, and my patients have done very well.”

POST-OP LATERAL & A/P X-RAYS AT 9 MONTHS



NOTED INTERBODY FUSION WITH BRIDGING BONE THROUGH AND ANTERIOR TO THE SPACER

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