

# NATURAL MATRIX PROTEIN® (NMP®) IN CERVICAL INTERBODY FUSION

NMP bioimplant is a 100% human allograft delivering physiologic levels of bioavailable growth factors that guide bone regeneration and fusion



INDUCE BIOLOGICS

## Background

An 80-year-old female presented with complaints of neck pain accompanied by radicular symptoms in the right upper extremity. Her medical history was unremarkable, with no reported comorbidities and no prior history of spinal fusion surgery. Clinical and radiological evaluations confirmed a diagnosis of cervical degenerative disc disease and spinal stenosis.

Surgery was performed to alleviate neural compression and stabilize the affected cervical segments. Postoperative follow-up focused on symptom resolution and radiographic assessment of fusion and alignment.

This case illustrates successful interbody fusion and excellent clinical recovery in an elderly patient with spondylosis using NMP Fibers in a 3-level ACDF.

## Pre-operative Assessment

Pre-operative X-ray assessment obtained one year prior to surgery demonstrated degenerative disc disease and spinal stenosis at C4/C5, C5/C6 and C6/C7.



1-Year Pre-Op

## Surgical Plan

The surgical plan involved a three-level anterior cervical discectomy and fusion (ACDF) at C4/C5, C5/C6 and C6/C7. Grafting was performed using 5cc of NMP Fibers rehydrated with saline, with no other graft materials added.

The patient underwent the ACDF via a left-sided anterior approach. After general anesthesia and neuromonitoring setup, the cervical spine was exposed from C4 to C7. Discectomies and decompressions were performed at all three levels, including removal of disc material and most of the posterior longitudinal ligament. Interbody spacers packed with NMP Fibers were placed at each level. A cervical plate was then affixed spanning C4 to C7 using screws, and anterior osteophytes were removed as necessary.

Final imaging confirmed excellent placement of the bone grafts and hardware. Hemostasis was achieved, a drain was placed, and layered closure was performed. The patient tolerated the procedure well with no complications or neuromonitoring.

## Results

12-month postoperative X-rays demonstrated successful fusion across all three cervical levels, with no reported adverse events.

Flexion-extension radiographs demonstrated no translational motion, with  $<3^\circ$  angular motion. Radiographic evidence of graft incorporation and remodeling was also observed.

Patient showed complete symptom resolution, with VAS pain scores dropping from 10 to 0 and NDI score improving from 42 to 10.

A review of the patient's records determined that no adverse events were reported.

*"Using NMP in the cervical spine has been a game changer. We've treated over 250 cases with no soft tissue complications, no heterotopic ossification, and no osteolysis. The handling is outstanding. It's easy to mold, place, and work with throughout the procedure."*

— Mark A Prevost II, MD  
Spine Surgeon,  
Alabama Back Institute

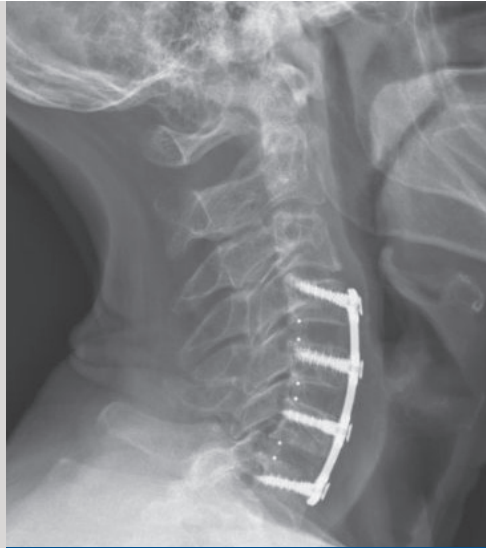


## Post-operative Assessments

*Clear progression of bone formation over time can be seen*



1-Month Post-Op



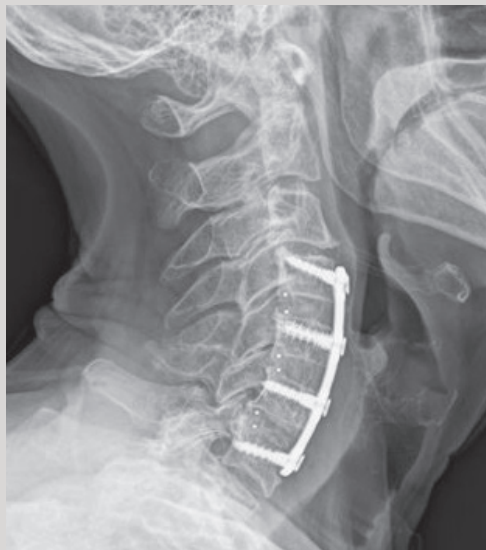
3-Month Post-Op

### Months 1 & 3

No bone formation visible within the interbody space



6-Month Post-Op



12-Month Post-Op

### Months 6 & 12

Radiopacity observed in the interbody space at all implanted levels, consistent with new bone formation. Complete bony bridging observed at all levels.

## CONCLUSION

NMP Fibers were successfully used in a 3 level ACDF to treat this debilitated 80-year-old patient. The procedure was completed without adverse events, and the patient achieved significant improvement in both pain and functional outcomes.

The use of NMP graft material allowed for easier radiographic assessment of fusion on postoperative X-rays, enhancing clinical evaluation.

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