

Multi-Level Anterior Cervical Fusion with a Next Generation Bone Matrix with Bone Marrow Aspirate

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CASE STUDY

ConCelltrate® 100

Surgical Summary

Clinical Presentation:

- 67-year-old male presented to clinic with neck and right upper extremity symptoms (of multiple years duration).
- Complained of right-sided posterior neck and trapezia pain as well as pain into the right triceps, ventral forearm, and index finger. Numbness and tingling in similar distribution.
- Denied weakness of the upper extremities, bowel or bladder incontinence or retention, and gait instability.
- Patient failed nonoperative, conservative treatment which included physical therapy, medication management, and multiple epidural steroid injections over a period of eight years.
- History of arthritis, asthma controlled with medication, tonsillar cancer treated successfully with radiation three and a half years prior.
- Exam revealed full motor strength 5/5 bilaterally, sensation subjectively diminished to light touch along triceps, deep tendon reflexes 2+ at biceps, brachioradialis and triceps tendons bilaterally, Hoffman sign negative bilaterally.
- MRI cervical spine without contrast (Figures 1, 2, 3) revealed multilevel moderate to severe cervical stenosis centrally from C3-C7, foraminal stenosis from C3-C7, C6- 7 uncovertebral arthrosis and facet disease results in severe left and moderate severe right foraminal narrowing, C5-C7 disc desiccation with canal narrowing, multilevel spondylosis, no evidence of cord compression or myelomalacia.

Intraoperative Findings:

- Severe disc degeneration with anterior and posterior osteophyte, as well as uncovertebral osteophyte creating foraminal stenosis at C5-6 and C6-7.

Figure 1.



Figure 2. CS-6



Figure 3. C6-7



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Surgical Procedure:

- Anterior cervical fusion C5-6, C6-7.
- Anterior cervical decompression via complete discectomy and resection of osteophyte, C5-6, C6-7.
- Anterior cervical interbody instrumentation with machined cortical allograft C5-6, C6-7.
- Segmental anterior cervical instrumentation with spine view plate and six screws.
- Aspirated 6 ml of bone marrow, which underwent cell sequestration. Sequestered cells, combined with locally obtained autogenous bone and ConCelltrate® 100 to make an autogenous bone graft mixture, was packed into the allograft rings prior to implantation.

Post-Operative Notes:

- The surgical procedure was successful.
- 6 months post-op: standard radiograph reveals fusion / arthrodesis at C6-7 intervertebral graft. Radiolucent line between vertebra and graft at C5-6.
- 12 months post-op: Standard radiograph reveals solid arthrodesis from C5-C7 (Figure 5)

Figure 4.



Surgeon Perspective:

“ConCelltrate® allowed me to control the handling properties, which is very important when using autologous bone and/or blood. I'm pleased with the clinical outcomes I'm seeing when I use this differentiated allograft”