



Clinical Experience With Actifuse™ Synthetic Bone Graft In Posterolateral Lumbar Fusion

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Introduction

68-year-old female patient with a several year history of gradual onset of low back pain. Over several months she has developed bilateral radiating leg pain along the posterior hamstring and calf associated with standing for 15 minutes or walking 30 metres. In addition, she developed intermittent paresthesias of the feet and an overall feeling of subjective weakness when her pain increases.

Her diagnostic imaging studies include anteroposterior and lateral flexion-extension dynamic radiographs.



The lateral images confirm the presence of L4-L5 degenerative spondylolisthesis, which increases slightly with forward bending.

MRI shows severe central canal stenosis at L4-L5 secondary to facet joint and ligamentum flavum hypertrophy.

Given her progressive disability, surgical intervention was indicated. Decompression of L4-L5 was recommended with concomitant posterolateral arthrodesis secondary to the spondylolisthesis.

Surgical Procedure

A Complete laminectomy of L4 and L5 was performed. The transverse processes and intertransverse membrane was cleared of soft tissues and prepared for grafting by denuding the articular cartilage of the L4-L5 facet joint and decortication of the dorsal exposed surfaces.

Bone marrow aspirate (20cc's) was taken from the posterior superior iliac crest and was mixed with 10cc of Actifuse™ synthetic graft. The marrow-enriched composite was allowed to coagulate into a handle-able graft which was inserted into the prepared posterolateral gutter. Bilateral pedicle screw fixation was performed to complete the procedure.

The patient's postoperative course was unremarkable and has progressed well. She noted immediate relief of subjective leg symptoms and after several weeks noted improvement of back and incisional pain. She has progressed well with activity and has started an exercise and flexibility program for the lumbar spine. Estimated blood loss for the procedure was 500cc.

Clinical / Radiographic Follow-Up

At six months postoperatively, the patient continues to do well. Radiographic evaluation includes standing anteroposterior and lateral lumbar radiographs confirming the stable positioning of the instrumentation and absence of any fixation failures.

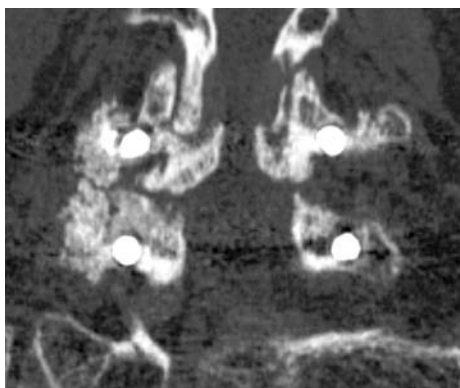


X-ray at 6 months

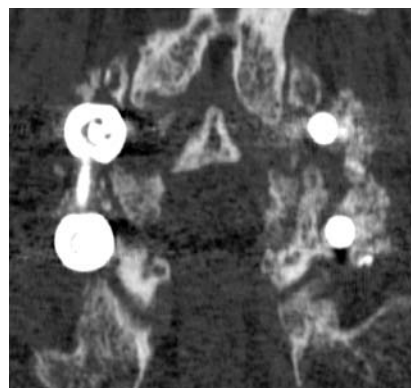


X-ray at 6 months

Computed tomography with coronal reconstructed images is shown.



CT Scan at 6 months



CT Scan at 6 months

The intertransverse process area exhibits traversing graft that is uniform without a granular appearance. This is consistent with remodeled bone.

Near complete incorporation into the transverse processes is shown at this early time point.

The graft material used in this case was Actifuse™.

*Actifuse is a unique silicated substituted bone graft which has been shown to produce:
More bone, less time*