

Restorative Neurostimulation of lumbar multifidus muscles in a patient with severe degenerative scoliosis



Background:

- Chronic non-specific low back pain (LBP) is associated with many etiologies
- Multifidus dysfunction (MD), characterized by impaired neuromuscular control and muscle atrophy, is a common etiology of LBP
- LBP with associated MD is seen in patients with degenerative scoliosis
- Restorative neurostimulation shows promise for managing LBP related to MD

Case:

- 76 year-old female with 20-year history of progressively worsening LBP and right leg pain
- Pain has been unresponsive to conservative therapies and injections.
- Current medication regimen includes gabapentin, etodolac, acetaminophen, cyclobenzaprine and tramadol
- Known severe degenerative scoliosis
- MRI confirmed grade 2 (>50%) multifidus atrophy
- For management of symptoms, ReActiv8 regenerative neurostimulation device implanted

Images:



Figure 1: X-ray entire spine from 5/2020 showing evidence of severe degenerative scoliosis

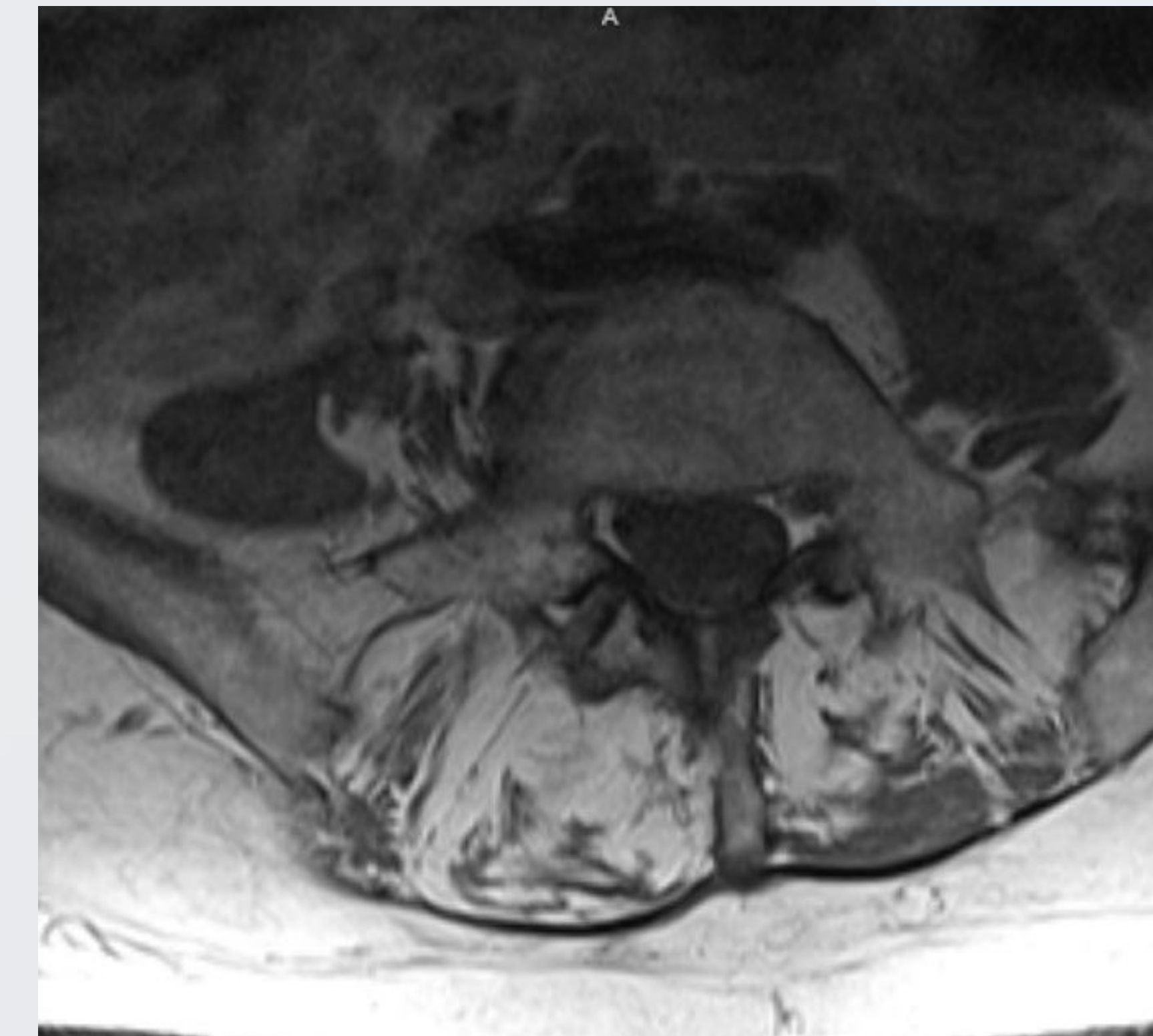


Figure 2: MRI lumbar spine from 5/2020. T1 weighted, axial image at the level of L5 showing evidence of bilateral grade 2 multifidus atrophy

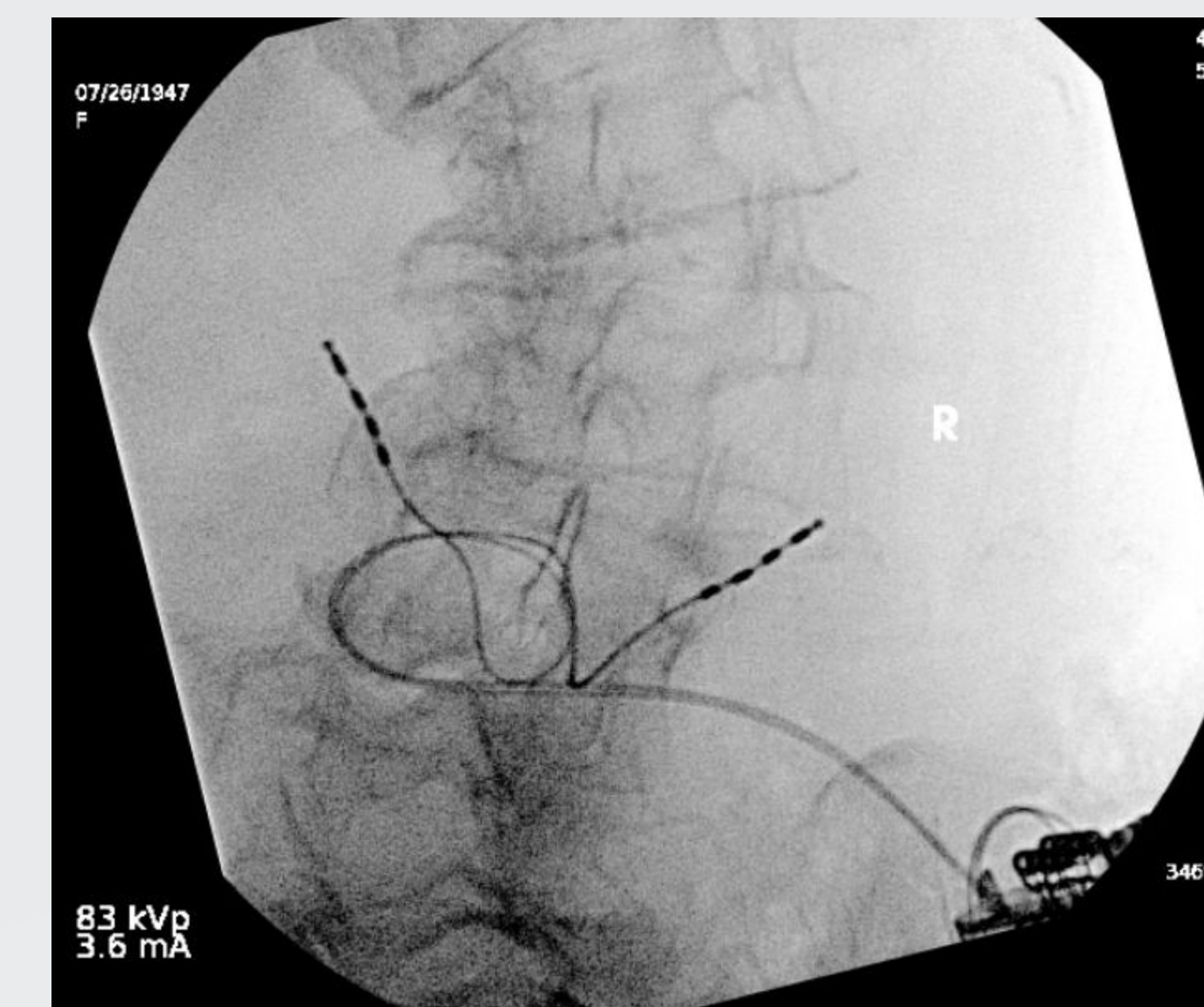


Figure 3: Final fluoroscopic image following ReActiv8 implantation

Outcome:

- 12 day post operative visit: No complications. Right-sided lead was activated. Therapy sessions initiated
- 10 week follow up: Subjective improvement in pain and functionality, requiring less etodolac and acetaminophen, Left-sided lead activated, Reports ongoing right leg pain
- 15 month follow up: Patient undergoes right total hip arthroplasty for management of right leg pain
- 19 month follow up: Ongoing relief of back pain, Patient able to discontinue use of tramadol

Discussion

- Restorative neurostimulation shows promise as pain management strategy for patients with scoliosis and MD.
- Further research is needed to determine overall safety, feasibility and efficacy

References

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