

Minimally Invasive Interventions for Chronic Neck Pain in Klippel-Feil Syndrome: A Case Report

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CASE DESCRIPTION

PATIENT 64-year-old woman

PRESENTING COMPLAINT

- Six-month history of bilateral neck pain, rated 6/10, described as sharp, burning, and aching
- Worsened by cervical spine motion
- Partially relieved by rest

PHYSICAL EXAMINATION FINDINGS

- No neurologic deficits reported

IMAGING FINDINGS

- X-ray:** Congenital fusion of C4–C6 with rudimentary disc spaces
- MRI:**
 - Posterior dysraphism at C6–C7
 - Large syrinx from C4–C5 to C7–T1
 - Moderate foraminal stenosis at C2–C3 and C3–C4
 - Disc bulging and uncovertebral hypertrophy
 - Degeneration of adjacent segments with mild spinal canal stenosis and anterolisthesis at C3–C4

RESULTS

INITIAL MANAGEMENT

- Physical therapy
- Oral analgesics
- Conservative therapy failed to provide adequate relief

INTERVENTIONS

- Two fluoroscopically guided diagnostic medial branch blocks (MBB) at bilateral C2–C3 and C3–C4 facet joints
 - First MBB:** 3 mL 0.5% bupivacaine + 2 mL iohexol
 - Second MBB:** 3 mL 0.5% bupivacaine + 1 mL iohexol (Figure 3).
- Cervical RFA** at bilateral C2–C3 facet joints

OUTCOME

- Both procedures were well tolerated
- Significant (90%) post-procedural pain relief was achieved after MBBs
- No complications reported

PLANNED MANAGEMENT

- Post-procedure follow-up

FIGURE 3



Figure 3. Cervical Spine Medial Branch Nerve Block Injection

FIGURE 1



Figure 1. Lateral X-Ray of Cervical Spine

FIGURE 2



Figure 2. AP X-Ray of Cervical Spine

DISCUSSION

- Klippel-Feil syndrome (KFS) is a congenital cervical fusion (Figures 1 and 2) often associated with adjacent segment degeneration
- Cervical facet-mediated pain can be difficult to diagnose and manage due to altered anatomy
- Fluoroscopic guidance is critical for safe needle placement during interventions
- Diagnostic MBBs helped identify cervical facet joints as the likely pain source
- RFA demonstrated efficacy for cervical facet-mediated pain
- Potential of personalized, image-guided interventions in anatomically complex patients

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