McCormack et al. present 1-year results in 60 patients with cervical radiculopathy due to spondylosis and stenosis that was treated with a bilateral percutaneous facet implant. The implant consists of a screw and washer that distracts and immobilizes the cervical facet for root decompression and fusion. Clinical and radiological results are analyzed.

Between 2009 and 2011, 60 patients were treated with the DTRAX Facet System in a multicenter prospective single-arm study. All patients had symptomatic clinical radiculopathy, and conservative management had failed. The majority of patients had multilevel radiographically confirmed disease. Only patients with single-level radiculopathy confirmed by history, physical examination, and in some cases confirmatory nerve blocks were included. Patients were assessed preoperatively with Neck Disability Index, visual analog scale, quality of life questionnaire (Short Form-12 version 2), CT scans, MRI, and dynamic radiographs. Surgery was percutaneous posterior bilateral facet implants consisting of a screw and expandable washer and iliac crest bone aspirate. Patients underwent postoperative assessments at 2 weeks, 6 weeks, 3 months, 6 months, and 1 year with validated outcome questionnaires. Alterations of segmental and overall cervical lordosis, foraminal dimensions, device retention and fusion criteria were assessed for up to 1 year with CT reconstructions and radiographs. Fusion criteria were defined as bridging trabecular bone between the facets, translational motion < 2 mm, and angular motion < 5°.

All patients were followed to 1 year postoperatively. Ages in this cohort ranged from 40 to 75 years, with a mean of 53 years. Forty-two patients were treated at C5-6, 8 at C6-7, 7 at C4-5, and 3 at C3-4. Fifty-six had bilateral implants; 4 had unilateral implants due to intraoperative facet fracture (2 patients) and inability to access the facet (2 patients). The Neck Disability Index, Short Form-12 version 2, and visual analog scale scores were significantly improved at 2 weeks and remained significantly improved up to 1 year. At the treated level, 93% had intrafacet bridging trabecular bone on CT scans, translational motion was < 2 mm in 100% and angular movement was < 5° in 83% at the 1-year follow-up. There was no significant change in overall cervical lordosis. There was a 1.6° loss of segmental lordosis at the treated level at 1 year that was significant. Foraminal width, volume, and posterior disc height was significantly increased at 6 months and returned to baseline levels at 1 year. There was no significant decrease in foraminal width and height at adjacent levels. There were no reoperations or surgery- or device-related complications, including implant failure or retained hardware.

Results indicate that the DTRAX Facet System is safe and effective for treatment of cervical radiculopathy [1].

1)
McCormack BM, Bundoc RC, Ver MR, Ignacio JM, Berven SH, Eyster EF. Percutaneous posterior cervical fusion with the DTRAX Facet System for single-level radiculopathy: results in 60 patients. J Neurosurg Spine. 2013 Mar;18(3):245-54. doi: 10.3171/2012.12.SPINE12477. Epub 2013 Jan 18. PubMed PMID: 23330952.

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