Abstract CSRS 2023

Noninferiority of posterior versus anterior cervical surgery: 2-year results (FACET)

Background:

Posterior foraminotomy (posterior surgery) is a valid alternative to anterior discectomy with fusion (anterior surgery) as surgical treatment of cervical radiculopathy, but quality of evidence is limited.

Methods:

This multicenter, randomized, noninferiority trial assessed patients with single-level cervical radiculopathy in 9 Dutch hospitals. Primary outcomes were success ratio (Odom criteria) and decrease in arm pain (visual analogue scale), with a 10% noninferiority margin. Secondary outcomes were neck pain, disability, workability, quality of life, treatment satisfaction, complications, and reoperation. Generalized linear mixed effects modelling was applied.

Results:

From January 2016 to May 2020, 265 patients were randomized (132 posterior vs. 133 anterior). Twenty-five patients did not have the allocated intervention, mostly due to symptom improvement. At 2 years follow-up, primary outcome data were available for 236 patients (97%). Predicted proportions of successful outcome were 0.81 after posterior and 0.74 after anterior surgery (difference, -0.06 percentage points; one-sided 95% CI, -0.02), indicating noninferiority of posterior surgery. Between-group difference in arm pain as well as decrease in arm pain were -2.7 (one-sided 95% CI, 7.4) and 1.5 (one-sided 95% CI, 8.2), both confirming posterior noninferiority. Secondary outcomes demonstrated only small between-group differences. Reoperations (%) occurred in 9 (8) patients after posterior and 7 (6) after anterior surgery.

Conclusions:

This trial demonstrates that, after 2-year follow-up, posterior surgery was noninferior to anterior surgery regarding success rate and arm pain reduction in patients with cervical radiculopathy. Netherlands Trial Register Identifier: NTR5536.