INTRODUCTION: Unilateral cervical facet injuries (fractures, subluxations, and dislocations) are currently treated with bracing or surgery. Undisplaced fractures will frequently be treated non-operatively (NO), while if they present with, or develop subluxation, root deficit, or soft tissue MRI findings, they are more likely to be treated surgically (Sx). There are no studies directly comparing the outcomes of NO and Sx treatment in unilateral facet injuries.

The purpose of this study is to retrospectively compare Sx and NO treatment of unilateral cervical facet injuries by comparing pain and disability measurements at a minimum of 1 yr follow-up.

Nine participating centres; all members of the Spine Trauma Study Group contributed 66 patients with unilateral cervical facet injuries from C3 to T1 excluding those with spinal cord injury, multiple trauma, or pre-existing morbidity.

Socio-demographic data was collected from the patient chart. SF-36 and the NASS cervical outcome instrument were collected at a minimum of one year follow-up. NO treatment consisted of cervical orthosis while Sx consisted of either anterior, posterior or combined stabilization.

METHODS: Independent variables were analyzed for the NO and Sx treatment groups using the Wilcoxon test for continuous and Fisher’s Test for categorical variables. Linear regression modeling was applied with pain and disability as the dependent variables and independent variables determined by a stepwise model selection procedure.

RESULTS: There were 53 Sx and 13 NO patients with no significant difference in age, gender, injury mechanism or pattern, between the Sx and NO groups. Sx patients had a length of stay significantly longer than NO (6.0 vs. 3.1 P<0.001).
Mean NASS Pain/Disability (NASS PD) score was 85.58 with 30% of patients reporting a perfect score. Mean SF-36 Bodily Pain score (SF BP) was 68.3 and is significantly lower than the mean of a normative sample of the healthy population (p=0.03). On average the Sx patients scored 3.8 points higher on the NASS Pain scale (p=0.48) while they scored 10.6 point higher on the SF BP subscale (p=0.30). Sx patients followed >18 mo had an average NASS PD score 8.2 points higher than those followed for <18mo, while the NO patients followed >18 mo had an average NASS PD score 5.0 points lower than those followed <18mo. For those patients followed >18mo, the mean difference between Sx and NO patients’ NASS PD score was 12.7 (p=0.05) with Sx patients having the higher scores. Patients with co-morbidities scored lower on all measures of pain and disability (p=0.007). Longer follow-up and more caudal injury levels resulted in improved scores (p=0.03).

CONCLUSIONS: This is the largest reported outcome study of patients with unilateral cervical facet injuries. Our primary analysis did not show a significant treatment (Sx vs NO) effect. A subgroup analysis suggested that in the short term (<18mo.) Sx and NO patients report similar pain, with longer follow-up, the Sx treated patients experience improved recovery while the NO patients report higher levels of pain. This hypothesis generating finding may be due to the development of secondary degenerative changes in the NO patients over time, and further analysis with larger samples is required. Regardless of the method of management, patients with unilateral cervical facet injuries do not return to the status of healthy subjects with respect to pain.

If noted the author indicates something of value received. The codes are identified as a - research or institutional support; b - miscellaneous funding; c - royalties; d - stock options; e - consultant or employee; n - no conflicts disclosed and * disclosure not available at the time of printing. For full information, refer to inside cover.

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