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Epidemiology

Long-term Outcomes of Lumbar Fusion Among Workers' Compensation Subjects: A Historical Cohort Study

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Abstract

Study Design. Historical cohort study.

Objective. To determine objective outcomes of return to work (RTW), permanent disability, postsurgical complications, opiate utilization, and reoperation status for chronic low back pain subjects with lumbar fusion. Similarly, RTW status, permanent disability, and opiate utilization were also measured for nonsurgical controls.

Summary of Background Data. A historical cohort study of workers' compensation (WC) subjects with lumbar arthrodesis and randomly selected controls to evaluate multiple objective outcomes has not been previously published.

Methods. A total of 725 lumbar fusion cases were compared to 725 controls who were randomly selected from a pool of WC subjects with chronic low back pain diagnoses with dates of injury between January 1, 1999 and December 31, 2001. The study ended on January 31, 2006. Main outcomes were reported as RTW status 2 years after the date of injury (for controls) or 2 years after date of surgery (for cases). Disability, reoperations, complications, opioid usage, and deaths were also determined.

Results. Two years after fusion surgery, 26% ($n = 188$) of fusion cases had RTW, while 67% ($n = 483$) of nonsurgical controls had RTW ($P \leq 0.001$) within 2 years from the date of injury. The reoperation rate was 27% ($n = 194$) for surgical patients. Of the lumbar fusion subjects, 36% ($n = 264$) had complications. Permanent disability rates were 11% ($n = 82$) for cases and 2% ($n = 11$) for nonoperative controls ($P \leq 0.001$). Seventeen surgical patients and 11 controls died by the end of the study ($P = 0.26$). For lumbar fusion subjects, daily opioid use increased 41% after surgery, with 76% ($n = 550$) of cases continuing opioid use after surgery. Total number of days off work was more prolonged for cases compared to controls, 1140 and 316 days, respectively ($P < 0.001$). Final multi-variate, logistic regression analysis indicated the number of days off before surgery odds ratio [OR], 0.94 (95% confidence interval [CI], 0.92–0.97); legal representation OR, 3.43 (95% CI, 1.58–7.41); daily morphine usage OR, 0.83 (95% CI, 0.71–0.98); reoperation OR, 0.42 (95% CI, 0.26–0.69); and complications OR, 0.25 (95% CI, 0.07–0.90), are significant predictors of RTW for lumbar fusion patients.

Conclusion. This Lumbar fusion for the diagnoses of disc degeneration, disc herniation, and/or radiculopathy in a WC setting is associated with significant increase in disability, opiate use, prolonged work loss, and poor RTW status.