

Impact of functional restoration after anterior cervical fusion on chronic disability in work-related neck pain

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Abstract

Background context: Spinal surgery in the workers compensation population shows evidence of less favorable outcomes than in general health cases. Although spine surgery has been alleged to be a cause of poor outcomes, such outcomes may be improved by appropriate postsurgical rehabilitation.

Purpose: To compare objective demographic, physical and psychological measurements and socioeconomic outcomes of treatment in work-related disabling cervical pain for the combination of anterior cervical fusion (ACF) plus functional restoration, compared with rehabilitation alone.

Study design/setting: A prospective study of patients undergoing ACF for degenerative disc disease before rehabilitation for work-related musculoskeletal disorders versus neck pain unoperated controls, with data collected in an outpatient tertiary interdisciplinary rehabilitation setting.

Patient sample: A group of 52 patients completed a functional restoration treatment program after undergoing ACF (Group S) at one or two levels for degenerative cervical disc disease. During the study period, 625 patients with work-related neck pain were identified from the same study population, from which a rehabilitation (Group R) comparison group (n=150) was identified who were stratified according to the number and location of other compensable body parts.

Outcome measures: Socioeconomic outcomes relevant to chronic disabling work-related cervical spinal disorders are reported based on 1-year posttreatment interviews. Pre- to posttreatment assessment of pain intensity, disability, depression and cumulative physical capability were assessed prospectively.

Methods: All patients were totally or partially disabled before completing an intensive, medically supervised, functional restoration program combining quantitatively directed exercise progression with a multimodal disability management approach. Preprogram preparation included drug detoxification, psychotropic medication management and preparatory aerobic and mobility training. The intensive treatment phase involved strength and endurance training, with counseling geared to goals of work return and fitness maintenance. The 1-year structured clinical interview had a contact rate of 93% to 95%, and partial information acquisition on all patients.

Results: Although Group S had lower work return and work retention outcomes, the differences were not significant. Group S patients had significantly more health utilization from a new provider in the year after completion of functional restoration (46% vs 24%; OR=2.7 [1.3, 5.3], $p<.004$). Group S patients were also more likely to be depressed, both at pre- and postrehabilitation. There were no significant differences in recurrent injury, additional surgery, physical measures or pain/disability self-report between the groups.

FDA device/drug status: not applicable.

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