



Surgical outcome of workman's comp patients undergoing endoscopic foraminal decompression for lumbar herniated disc

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Background: Worker's compensation (WC) patients undergoing spine surgery typically experience delayed return to work (RTW) compared with non-WC patients, especially those approved for surgery undergoing traditional open spine surgery. The purpose of this study was to describe the observe RTW rates in WC patients after minimally invasive "selective endoscopic discectomy" (SED™) for a lumbar herniated disc.

Methods: Clinical outcomes using the modified Macnab criteria and RTW data were analyzed in 118 WC patients following the outpatient SED™ procedure in an ambulatory surgery center (ASC) using only local anesthesia with or without sedation. This endoscopic transforaminal decompression was trademarked by Anthony Yeung as SED.

Results: Single-level SED™ was performed in 62 patients, a two-level in 48 patients, a three-level decompression in 6, and a four-level decompression in another two patients, respectively. Patient selection was augmented by diagnostic and therapeutic injections performed preoperatively to determine how many levels of spine segments required surgical intervention. At the two-year follow-up, *Excellent* Macnab outcome in 36 patients, *Good* in 53, *Fair* in another 21, and *Poor* in the remaining eight patients, respectively. Of the 118 WC patients, 89 (75.42%) were released back to their original job within in 6 weeks from the index operation. The average time to work release was 4.2 months. Twenty-one patients who had previous spine surgery were working. Twenty-nine of the 118 study patients (24.58%) were unable to return to their original job.

Conclusions: In the hands of a well-trained endoscopic spine surgeon, RTW rates with SED™ are higher than with traditional open translaminar surgery. Therefore, endoscopic surgery should be considered for WC patients and further be validated as a cost-effective alternative to open spine surgery.

Keywords: Worker's compensation (WC); endoscopic discectomy; clinical outcomes; herniated disc

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Introduction

Access to surgery and postoperative return to work (RTW) in workman's compensation patients is often delayed due to a variety of reason (1-6). In this study, the authors

compared postoperative clinical outcomes and RTW data in patients who sustained work-related on the job lumbar disc herniations associated with radiculopathy and who were either treated with same day outpatient selective endoscopic discectomy (SED™) procedure under local anesthesia (7-19).

Methods

In a four-year study, January 1995 to December 1999, 118 consecutive workman's comp patients were operated with transforaminal SED™ by AT Yeung at his ambulatory surgery center (ASC) using vetted clinical protocols (11-19). The primary clinical outcome measure were the modified Macnab criteria.

The purpose was to report the results of SED™ and the associated RTW data. Most of the first author's cases required special approval and extreme vetting by the Industrial Commission of Arizona (ICA) as a matter of policy at the time, as endoscopic spine surgery was determined to be "experimental." The medical director of a WC insurance company instigated this study when the policy, under his direction, directed that all endoscopic surgical requests had to be personally reviewed by himself, approved by senior case managers under his charge, or the insurance company's approved surgical consultants. This preauthorization process directly challenged the surgical indications established by the first author utilizing diagnostic and therapeutic foraminal epidural blocks to identify symptomatic pain generators (10,11,20-22).

Results

Of the 118 consecutive patients undergoing SED™, 62 patients underwent single level decompression while 48 patients received 2 level decompression, 6 patients had 3 levels and 2 patients underwent 4 level decompression. All of the 118 patients receiving transforaminal endoscopic decompression had a same-day procedure in the ASC under local anesthesia and sedation. All patients were working before their injury. At minimum of two-year follow-up, clinical outcome analysis using Macnab criteria showed *Excellent* outcome in 36 patients, *Good* in 53, *Fair* in another 21, and *Poor* in the remaining 8 patients, respectively.

After discharge from the outpatient surgical facility, 89 (75.42%) patients were released back to their original job, with an average RTW in 6 weeks. The average time to work release was 4.2 months in spite of advanced multilevel involvement, and work poorly suited for heavy manual labor such as construction work and manual labor. Twenty-one patients had previous spine surgery, were working.

All 21 returned to work. Twenty-nine of the 118 study patients (24.58%) were unable to return to their original job. These patients, however, either returned to light or sedentary work. All improved and were satisfied with their

decision to have endoscopic spine surgery as a first surgical option in a staged manner.

Discussion

The study demonstrated that *Excellent* and *Good* clinical outcomes could be achieved with the SED™ procedure in the worker's compensation patients. Delayed RTW or not returning to the same job or not returning to work at all has been recognized in this patient population due to multiple factors impacting the individual patient's RTW decision (23). Postoperative disability application following open traditional spine surgery are not uncommon effectively ending the worker's professional career. In comparison, the vast majority returned to work following the SED™ procedure and returned to work to the same type, of job, but with restrictions. This compares favorably to the outcomes reported in the peer reviewed literature (2,3,6,23).

The motivation for reporting these numbers was two-fold. First, there is a lack of literature on the outcome and RTW data in worker's compensation (WC) patients with the endoscopic SED™ decompression procedure. Second, the first author had an interest in demonstrating the exemplary historical context of the hurdles against endoscopic spine surgery some 20 years ago—a topic of a global surgeon survey published in this *JSS* special focus issue, where many surgeons reported coming up against similar obstacles to the implementation of endoscopic spine surgery now, as then, highlighting the relevancy of author's experience in today's context. Between 1995 and 1999, obtaining insurance authorization for the SED™ was much more difficult due to its novelty in the United States at the time. Although the data clearly shows that outcomes with the SED™ procedure obtained by the first author in the WC patient setting fare much better than reported evidence then and today, there was significant pushback at the time by medical directors who proclaimed the SED™ procedure experimental. Therefore, the impetus for this study, at least in part, was fueled by this workman comp's medical director and a local fellowship-trained spine surgeon who vehemently and aggressively tried to complain to the medical board. His complaint was rejected by the medical board. Ultimately, this controversy prompted civil litigation against the medical director of the insurance carrier for his policy decision to deny authorization for surgical intervention for torturous interference of the first author to practice medicine. This civil suit was settled out of court against ICA medical director's policy to single out

surgeons performing endoscopic spinal surgery. A favorable settlement against the medical director was achieved.

The published literature universally demonstrates less favorable results with workman's comp patients injured on the job compared to non-workman's comp patients (2,3,6,23). The operating surgeon of this study obtained IRB approval from St Luke's Medical Center in Phoenix Arizona in 1998 to study endoscopic decompression for a broad spectrum of painful degenerative and traumatic conditions in the lumbar spine. Nowadays, insurance carriers routinely require more aggressive vetting of preauthorization request for elective spine surgery as a cost-cutting measure. At times, referrals to their "selected" or in-network surgeons are made. Today, it is also more routine to involve nurse case managers or hired non-surgeon physician consultants to obtain approval before surgery is authorized. This has resulted in less freedom of choice for unsuspecting injured workers in selecting their surgeons. The consultants who provide second opinions are often non-practicing surgeons or physicians without the necessary surgical subspecialty training. Approval is required as a matter of policy by contracted insurance company consultants, who are directed to inquire whether the required trial of nonsurgical-, or interventional pain management, and/or a period of failed physical therapy took place before surgery is authorized.

The return-to-work (RTW) data found in this study compare favorably with reported RTW data reported in the literature and are on par with the RTW data reported by another study published in this *JSS* special focused issue also co-authored by the first author. That team of authors used Kaplan-Meier survival curve analysis to visually demonstrate the range of RTW work data concerning the type of work and the preoperative functional status of the patient. The findings of this study on WC patients are corroborated with the RTW work data found in non-WC patients which suggested that RTW may be delayed in patients with heavy-manual labor jobs. The authors study of the clinical outcomes and RTW data in WC patients is limited in scope because of the first authors limited access to information detailing additional confounding factors, such as the psychosocial dynamic at the work place, changes in the job description during the WC patient was out on sick leave, or whether the WC patient's job was held for him or her, or whether the WC patient's job was replaced or taken by somebody else. In spite of these limitations, the RTW rates found in this study are still higher than reported in studies analyzing traditional open spine surgery outcomes in WC patients employing more sophisticated statistical

analysis of clinical outcomes and confounding factors related to RTW (2,3,6,23).

Conclusions

Endoscopic spine surgery for painful conditions of traumatic and degenerative conditions of an aging spine is a cost-effective method for well-trained endoscopic surgeons that should be embraced and further validated for cost-effective spine care in workman's compensation patients. The historical context presented by the authors of this study suggests that proponents of endoscopic spine surgery experience less push-back from insurance carriers due to its overall improved acceptance by surgical subspecialty societies, and a growing body of high-grade clinical evidence supporting its merits.

Acknowledgments

None.

Footnote

Conflicts of Interest: The senior author designed and trademarked his *inside-out* YESS™ technique and receives royalties from the sale of his inventions. Indirect conflicts of interest (honoraria, consultancies to sponsoring organizations are donated to IITS.org, a 501c 3 organization).

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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