Patient Activation and Functional Recovery in Persons Undergoing Spine Surgery


The importance of individuals’ participation in their own health and recovery has been the focus of recent research. It is believed that patient activation, defined as “an individual’s propensity to engage in adaptive health behavior that may lead to improved outcomes,” can influence the difficulty or ease with which patients recover from surgery. The researchers of this Level I article sought to determine whether there was an association between preoperative patient activation and functional recovery after lumbar spine surgery.

Patient activation was assessed using the Patient Activation Measure, which was used to group individuals into different stages of activation: Stage I (low activation), Stages II and III (intermediate activation), and Stage IV (high activation). In this study, 65 patients undergoing elective lumbar spine surgery were preoperatively stratified according to their levels of patient activation: Stage I (n=15) Stage II (n=12), Stage III (n=22), Stage IV (n=16). Patients were compared based on pain, disability, physical health, and mental health.

Postoperatively, the authors found that individuals grouped in Stage I were less likely to attend prescribed physical therapy sessions than those in Stage IV. The physical therapists also stated that patients in Stage I were less engaged in their therapy sessions. Overall, pain and disability decreased (P<.05) 24 months postoperatively; however, patients in Stage IV were found to have a significantly better decrease in pain (P=.049) and disability (P=.035) than did patients in Stage I.

Moreover, the authors also found that the intensity of current pain at baseline was significantly lower for individuals in Stage III and IV than those in Stage I. There was no association between patients’ level of activation and change in mental health (P=.081).

Overall, higher patient activation (ie, participants in Stage IV) was associated with better recovery postoperatively. Individuals with high patient activation preoperatively experienced significantly more resolution of their disability 2 years postoperatively than did those with low patient activation.

Each month, this column summarizes a Level I article and provides a thought-provoking review on how the treatment in the article has either stood the test of time or serves as an example of how conventional wisdom has changed.

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REVIEW
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This study attempts to account for some of the variability in outcome following spine surgery and highlights the importance of patients participating in and taking responsibility for their own health and recovery. The implication that preoperative assessment of patient activation and use of strategies to increase this level may result in improved outcomes and are worthy of further investigation seems logical.

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Results of Cervical Arthroplasty Compared With Anterior Discectomy and Fusion: Four-year Clinical Outcomes in a Prospective, Randomized Controlled Trial


This study reported the 4-year results of arthroplasty using the Bryan Cervical Disc (Medtronic Spinal and Biologics, Memphis Tennessee) vs anterior cervical disectomy with fusion for the treatment of single-level degenerative cervical disk disease. Emphasis was placed on identifying any deterioration in outcomes since the 2-year outcomes were reported.

Assessment tools included the Neck Disability Index (NDI), the Short Form-36 (SF-36), and numeric rating scales for neck and arm pain. Radiographs were taken immediately postoperatively; prior to discharge; and at 3, 6, 12, 24, and 48 months postoperatively.

The 4-year follow-up included 181 patients who had received the Bryan Disc and 138 patients who underwent fusion. Both groups were demographically similar, and both reported substantial reduction in NDI scores; however, there was significantly greater improvement in the Bryan arthroplasty group (P<.001).

The overall success rates were 85.1% and 72.5% for the arthroplasty and fusion groups, respectively (P<.004). Improvement in arm pain, neck pain, and SF-36 physical component scores were also significantly greater in the arthroplasty group.

This study reported the WHO grade 3 and 4 adverse events that have occurred between the 2- and 4-year follow-up studies. Forty-four patients in the arthroplasty group had 63 adverse events and 36 patients in the fusion group had 64 adverse events; the difference was not significant.

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Most of the events were medical problems unrelated to the surgery or cervical spine; however, severe neck and arm pain occurred in 3 arthroplasty and 5 fusion group patients, and neurologic deficits occurred in 2 fusion patients.

Four years postoperatively, the Bryan Disc has proven to be a durable prosthesis, with few failures or explants. Clinical improvement has continued to be significantly better in the arthroplasty group compared with the fusion group.

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