Obstacles to Early Mobilization after Spinal Fusion and Effect on Hospital Length of Stay

Jason R. Ferrel, MD, Columbus, Ohio
Jared C. Bentley, MD, Columbus, Ohio
Roger E. Wiltfong, MD, Columbus, Ohio
David N. Hannallah, MD, Columbus, Ohio

Introduction: Spinal fusion procedures are increasing both in frequency and complexity and subsequently there is rise in associated healthcare costs. The recent shift toward a value-based health system has led to heightened efforts to capture and improve the value of spine surgical care. Recovery after spinal fusion continues to be refined through improved multidisciplinary care. Various recovery protocols exist, all of which incorporate and emphasize early and immediate postoperative mobilization. Mobilizing patients on the day of surgery is thought to improve functional recovery and reduce hospital length of stay (LOS). The objectives of this study were: 1) To evaluate whether early (day of surgery) ambulation of at least 30 feet with physical therapy has an impact on length of stay in patients undergoing spinal fusion procedures, and 2) To identify obstacles to early ambulation in patients undergoing spinal fusion procedures.

Methods: All patients undergoing elective primary or revision spinal fusion between August 2010 and June 2011 within a four-hospital health system were retrospectively reviewed. Patients evaluated by physical therapy (PT) the day of surgery were included in the study analysis. Ambulation was attempted the day of surgery with PT, with or without the use of assistive devices. If a distance of at least 30 feet was not reached, a questionnaire indicating the reason(s) not completed. Distance ambulated on the day of surgery, obstacles impeding ambulating 30 feet, and LOS were recorded. Patients reaching the in-patient unit after 1500 hours were excluded.

Results: Seventy percent of patients (320/457) successfully ambulated at least 30 feet on the date of surgery. Fifty two patients were not evaluated secondary to personnel related factors. A total of 85 patients ambulated under 30 feet, citing most commonly: orthostasis/hypotension (29.4 %), drowsiness (25.9%), nausea (23.5%), pain (17.6%), ordered on bed rest (16.5%), fatigue (8.2%), and patient refusal (1.2%) as limiting reasons. The average LOS of patients ambulating at least 30 feet the day of surgery was 1.85 days versus 2.79 days in those ambulating less (p<0.05).

Conclusion: The benefits of early postoperative mobilization are well recognized and this study highlights major obstacles limiting early ambulation after spinal fusion. Focusing continued multidisciplinary efforts towards such factors as postoperative hypotension, nausea, drowsiness, and pain after elective spinal fusion may further improve development of rapid recovery programs. Furthermore, ambulating a distance of at least 30 feet the day of surgery correlates with a statistically significant shorter LOS.