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Jason Dayan

Advisor(s): Bassel Diebo

Orthopaedic Surgery versus Neurosurgery: Prevalence and Surgical Detail Assessment of Adult Spinal Fusion Procedures

Spinal fusions are one of the most common surgical procedure in the United States, and the incidence is increasing with aging populations. They are performed by orthopaedic surgeons (OS) or neurosurgeons (NS). The annual prevalence of varying adult spinal fusions performed by OS, relative to NS, is unknown. The National Surgical Quality Improvement Program (NSQIP) database was queried for all adults (>18 years old) who underwent a spinal fusion between 2008 and 2016. The prevalence of fusions by OS and NS specialties were assessed among cases. Procedures investigated included all fusions, 2-3-level lumbar fusions, ≥ 4 -level lumbar fusions, anterior cervical discectomy and fusion (ACDF), 3-6-level posterior cervical fusion (PCF), and ≥ 6 -level PCF. Operative time and length of stay (LOS) were compared amongst OS and NS for each spinal fusion procedure. 67,775 adult spinal fusion procedures were performed from 2008 to 2016 (22,896 by OS and 44,879 by NS). Yearly trends were as follows: 2008: 8 NS, 11 OS; 2009: 23 NS, 16 OS; 2010: 1385 NS, 981 OS; 2011: 3126 NS, 1865 OS; 2012: 4217 NS, 2248 OS; 2013: 6186 NS, 2877 OS; 2014: 7203 NS, 3596 OS; 2015: 10959 NS, 5291 OS; and 2016: 11772 NS, 6011 OS. 2-3-level lumbar fusions consisted of 5851 cases. OS had shorter operative time and similar LOS than NS. ≥ 4 -level lumbar fusions encompassed 363 cases. OS had a similar operative time and LOS than NS. There were 27,748 cases of ACDF. OS had similar operative time and LOS than NS. 3-6-level PCF contained 195 cases. OS had similar operative time and LOS. There were 62 cases of ≥ 6 -level CF. OS had similar operative time and LOS compared to NS. The trends of adult spinal fusions increased significantly between 2008 and 2016, regardless of the spinal surgical fusion subtype. NS performed more spinal fusion cases, specifically ACDF, while OS performed significantly more 2-3-level and ≥ 4 -level lumbar fusions. Compared to NS, OS had shorter operative times for 2-3-level lumbar fusions.