SCIENTIFIC ARTICLE

Variation in Recommendation for Surgical Treatment for Compressive Neuropathy

Michiel G.H. Hageman, MD, Stephanie J.E. Becker, MD, Arjan G.J. Bot, MD, Thierry Guitton, MD, PhD, David Ring, MD, PhD, the Science of Variation Group

Purpose It is our impression that there is substantial, unexplained variation in hand surgeon recommendations for treatment of peripheral mononeuropathy. We tested the null hypothesis that specific patient and provider factors do not influence recommendations for surgery.

Methods Using a web-based survey, hand surgeons recommended surgical or nonsurgical treatment for patients in 2 different scenarios. Six elements of the first scenario (symptoms, circumstances, mindset, diagnosis, objective testing, and expectations) had 2 possibilities that were each independently and randomly assigned to each rater. For the second scenario, 2 different scenarios were randomly assigned to each rater. Multivariable logistic regression sought factors associated with a recommendation for surgery.

Results A total of 186 surgeons of the Science of Variation Group completed a survey regarding recommendation of surgery for 2 different patients based on clinical scenarios. Recommendations for surgery did not vary significantly according to provider characteristics. For the various elements in scenario 1, recommendation for surgery was more likely for patients who were self-employed and continued to work and who had objective electrodiagnostic abnormalities. For the 2 vignettes used in scenario 2, a recommendation for surgery was associated with abnormal electrophysiology.

Conclusions The findings of this study suggest that—at least in a survey setting—surgeons prefer to offer peripheral nerve decompression to patients with abnormal electrophysiology, particularly those with effective coping strategies.

From the Orthopaedic Hand and Upper Extremity Service, Massachusetts General Hospital, Boston, MA.

The Science of Variation Group: Abhijeet L. Wahegaonkar, Aida E. Garcia G, Alan Schefer, Alberto Pérez Castillo, Andrew L. Terrono, Andrew W. Gurman, MD, T Apard, Barry Watkins, Asif Ilyas, Bernard F. Hearon, MD, Brian P.D. Wills, MD, Bruce I. Wintman, Carrie Swigart, Catherine Spath, Cesar Dario Oliveira Miranda, Charles A. Goldfarb, Charles Cassidy, Charles Metzger, Charles Eaton, Chris Wilson, Christopher J. Walsh, Christopher J. Wilson, Christopher M. Jones, Colby Young, Craig A. Bottke, MD, Daniel A Osei, D. Kay Kirkpatrick, Daniel Polatsch, David E. Tate, Jr, David L. Nelson, MD, David M. Kalainov, David M. Lamey, MD, Doug Hanel, David M. Ostrowski, MD, David R. Miller, Desirae M. McKee, David Ruchelsman, Ekkehard Bonatz, Eon K. Shin, Eric P. Hofmeister, Evan S. Fischer, MD, F. Thomas D. Kaplan, C.H. Fernandes, Jamie E. Forigua, Fidel Ernesto Cayón Cayón, Frank J. Raia, Frank L. Walter, Gary K. Frykman, MD, Gary M. Pess, MD, Gary R. Kuzma, Georg M. Huemer, Gregory Dee Byrd, George W. Balfour, Gladys Cecilia Zambrano Caro, German Ricardo Hernandez, Gregory DeSilva, H. Brent Bamberger, DO, H.W. Grunwald, Hal MccUtchan, Harrison Solomon, MD, Hervey L. Kimball, J.E.B. Stuart, Ines C. Lin, Jack Choueka, James G. Reid, James M. Boler, Jay Pomerance, Jeff W. Johnson, Jeffrey Yao, Jim Calandruccio, Jennifer B. Green, Jennifer Moriatis Wolf, Jessica A. Frankenhoff, Jerome W. Oakey, Jochen Fischer, John Howlett, John Jiuliano, John M. Erickson, John McAuliffe, John P. Evans, John Taras, Jorge G. Boretto, Jonathan Isaacs, Jose A. Ortiz, Jr, José Fernando Di Giovanni, Jose Nolla, Joshua M. Abzug, Julie Adams, L.C. Bainbridge, Karel Chivers, Karl-Josef Prommersberger, Kevin J. Malone, Kendrick Lee, Lawrence S. Halperin, MD, Lawrence Weiss, Leon Benson, Lewis B. Lane, Lior Paz, Lisa Lattanza, M. Jason Palmer, Louis Catalano III, Marc J. Richard, Marco Rizzo, Martin Boyer, Maurizio Calcagni, Megan M. Wood, Michael Baskies, Michael W. Grafe, Michael Behrman, Michael Jones, Michael Quinn, Michael Nancollas, Michael W. Kessler, Miguel A. Pirela-Cruz, Milan M. Patel, Naquira Escobar Luis Felipe, Neil G. Harness, MD, Ngozi M. Akabudike, Nicholas J. Horangic, Oleg M. Semenkin, Nicky L. Leung, Patrick T. McCulloch, Patrick W. Owens, Paul A. Martineau, Paul Bettinger, Paul Guidera, Peter E. Hoepfner, Prasad Sitaram, Peter H. DeNoble, Peter Jebson, Philip Coogan, Phani Dantuluri, R. Glenn Gaston, MD, Ralf Nyszkiewicz, Ralph M. Costanzo, Ramon de Bedout, Randy Hauck, Renato M. Fricker, Richard S. Gilbert, Richard L. Hutchison, Richard W. Barth, Rick Papandrea, Robert M. Szabo, Robert R. L. Gray, Ross Nathan, Rozental, Sander Spruijt, Russell Shatford, Ryan Klinefelter, Samir Sodha, Ryan P. Calfee, Sanjeev Kakar, Saul Kaplan, Scott F. Duncan, Scott Mitchell, Seth Dodds, Sidney M. Jacoby, Stephen A. Kennedy, Stanley Casimir Marczyk, Stephen W. Dailey, MD, Steve Kronlage, Steven Alter, Steven Beldner, Steven J. McCabe, Stuart M. Hilliard, Thomas J. Fischer, Taizoon Baxamusa, C. Taleb, Thomas F. Varecka, Theresa Wyrick, Timothy G. Havenhill, Todd Siff, Victoria D. Knoll, Vipul P. Patel, W. Arnnold Batson, Warren C. Hammert, and William J. Van Wyk, MD.

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Corresponding author: David Ring, MD, PhD, Orthopaedic Hand Service, Yawkey Center, Suite 2100, Massachusetts General Hospital, 55 Fruit Street, Boston, MA 02114; e-mail: dring@partners.org.

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Clinical relevance The role of objective verification of pathophysiology is debated, but it is an influential factor in recommendations for hand surgery.

Key words Carpal tunnel syndrome, decision making, electrodiagnostic testing, surgical treatment, peripheral nerve.

Pathophysiology and demographics cannot explain the substantial geographic variation in rates of surgery. Cholecystecomy for silent gallstones and lumbar spine surgery are known examples of small area variation in surgical rates.[1,2] The rates and types of surgical treatment of distal radius fractures in the United States Medicare population also demonstrate small area variation based primarily on sex and age.[3]

Another area of variation is differences in opinion. Some of the most debatable issues in hand and upper extremity surgery are the least scientific, meaning the least objectively verifiable. For instance, the diagnosis and treatment of radial tunnel and pronator syndromes (diagnoses defined in part by normal electrodiagnostic testing) varies substantially: some surgeons make these diagnoses and offer surgical treatment routinely, whereas others consider these diagnoses illness constructs (an illness that exists only because we agree to behave as if it exists) and do not find them useful for patients. There is debate regarding whether idiopathic median neuropathy at the carpal tunnel should be considered a syndrome (a constellation of symptoms and signs) or an objectively verifiable median neuropathy at the carpal tunnel (pathophysiology/disease). For example, some surgeons offer patients with normal electrodiagnostic testing surgery based on symptoms alone, and others do not. Workers' compensation, litigation, and less specific symptoms are associated with worse outcomes from surgery,[4–10] but it is unclear whether these factors affect recommendations for surgery.[7,11]

In this study, we surveyed a large group of hand surgeons regarding recommendations for surgery for peripheral nerve disorders. We tested the null hypothesis that specific patient and provider factors do not influence recommendations for surgery.

MATERIALS AND METHODS

A total of 235 surgeons of the Science of Variation Group were asked to complete a survey regarding recommendation of surgery for 2 different patients based on clinical scenarios.

The Science of Variation Group is an international collaboration of practicing surgeon observers that studies variation in the definition, interpretation, classification, and treatment of human illness. Collaborative authorship and scientific curiosity and camaraderie are the only incentives for participation.

The study protocol was approved by our institutional review board. Incentives, other than acknowledgment as part of the Science of Variation Group, were not provided. Of the total 235 surgeons, 186 completed the survey (73%).

Evaluation

After logging in to the Web site, each observer entered his or her demographic and professional information: sex, country or region of practice, years in independent practice, supervision of trainees, and surgical subspecialty.

The observers were then presented with 2 scenarios and asked whether they would recommend surgical treatment (yes or no). In the first scenario (scenario 1), 6 elements of the scenario were randomized independently. The following was a constant part of scenario 1: "A 55-year-old woman, a journalist, presents with symptoms unresponsive to splinting, medication, modification of activities, and hand therapy." Afterward, information about (1) symptoms, (2) circumstances, (3) mindset, (4) diagnosis, (5) objective testing, and (6) expectations was presented. Each of these elements had 2 alternatives, A and B, which were randomly assigned. The alternatives for symptoms were (1A) symptoms consist of numbness of the thumb, index, middle, and ring fingers that occasionally wakes her from sleep, is present most mornings, and also occurs with hair drying, driving, and other bent-wrist activities; and (1B) symptoms consist of forearm and wrist pain with typing and occasional numbness of the entire hand. The alternatives for circumstances were (2A) she is not currently working; she has an open workers' compensation claim that is in dispute; and she has hired a lawyer to represent her; and (2B) she is self-employed and continues to work. The alternatives for mindset were (3A) she can type for only 10 to 15 minutes at a time, and the pain is excruciating; and (3B) nothing. The alternatives for