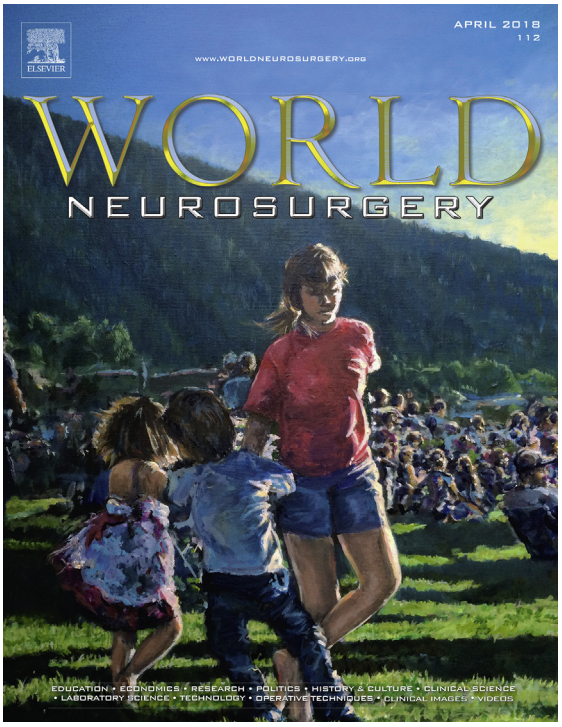
**Feature Editors**: Charles Y. Liu, Alexander Tuchman and Jesse Winer

## April 2018




***Pages*** **126-130**

### Virtual Reality Glasses and "Eye-Hands Blind Technique" for Microsurgical Training in Neurosurgery

***Joham Choque-Velasquez, Roberto Colasanti, Juhani Collan, Riina Kinnunen, Behnam Rezai Jahromi, Juha Hernesniemi***

Choque-Velasquez and colleagues report on a new method to simulate microsurgical techniques using smartphones, a computer and virtual reality goggles. By using a smartphone as a web-cam, and a second smart phone as virtual reality goggles the authors are able to simulate similar hand-eye coordination skills as those typically performed using a microscope, endoscope, or exoscope at a fraction of the cost of the traditional training tools. The authors were able to perform progressively complex exercises including micro-anastamoses using this setup. Neurosurgeons were able to document improvement in time to complete various microsurgical skills with repeated use of this setup. The authors advocate for the use of this affordable and efficient system to improve hand eye coordination in neurosurgical training.

***Pages*** **e31-e38**

### Opioid Prescribing Practices of Neurosurgeons: Analysis of Medicare Part D

***Syed I. Khalid, Owoicho Adogwa, Daniel T. Lilly, Shyam A. Desai, Victoria D. Vuong, Ankit I. Mehta, Joseph Cheng***

Khalid and colleagues analyzed the Part D Prescriber Public Use File in order to scrutinize the opioid prescribing practice of neurosurgeons. The authors found that 4,085 neurosurgeons were responsible for prescribing 971,581 claims for opioid medication resulting in 22,152,689 day supplies of medication. The total cost to the Centers for Medicare and Medicaid Services was $52,956,428.40 over a one year period. The authors found no statistically significant differences in regional practice. The authors make the point that the opioid misuse epidemic is a complex issue affecting the entire nation and that neurosurgeons should be aware of their prescribing practices.

***Pages*** **e331-e341**

### Aggressive Resection of Congenital Lumbosacral Lipomas in Adults: Indications, Techniques, and Outcomes in 122 Patients

***Shao Cong Bai, Ben Zhang Tao, Le Kai Wang, Xin Guang Yu, Bai Nan Xu, Ai Jia Shang***

The authors review the outcomes of their series of over 120 adult patients who presented with congenital lumbosacral lipomatous malformations to evaluate prognostic factors for surgical outcomes. The cohort was divided into 3 groups depending on length of symptom onset- less than 5 years, 5-18 years, or greater than 18 years. Over 80% of patients presented with bladder dysfunction, and 76% presented with constipation. Overall neurologic status was improved in 73% of their patients at three-month follow up, with pain and neuropathic ulcers being the most likely symptom to show improvement. Further analysis revealed that shorter pre-operative duration of symptoms and pre-operative pain were both independent predictors of post-operative improvement. The authors conclude that even though adults with lumbosacral lipomas have a longer duration of symptoms prior to surgery compared with children, they can still benefit from aggressive surgical treatment.

***Pages*** **e431-e441**

### Surgical Management of Myelomeningocele-Related Spinal Deformities

***Sergey O. Ryabykh, Olga M. Pavlova, Dmitry M. Savin, Alexander V. Burtsev, Alexander V. Gubin***

The authors discuss treatment timing and strategies of their series of 20 patients treated for spinal deformities related to myelomeningocele. At the time of surgery, the average patient in their cohort was 6.3 years old with a mean modified Japan Orthopedic Association (mJOA) scale of 7.3. On average, surgical intervention was able to achieve a 61 degree angle of kyphosis correction and 25 degree angle of scoliosis correction. Neurologic status, as defined by the mJOA scale improved by 0.6 on average. There were 13 total of complications reported, and 9 patients required re-operation. The authors conclude that early surgical correction of myelomeningocele related spinal deformities improves body balance and quality of life; however, such an approach may be challenging with significant risks, especially when a kyphectomy is involved.

***Pages*** **e548-e554**

### Frailty and Health-Related Quality of Life Improvement Following Adult Spinal Deformity Surgery

***Daniel B.C. Reid, Alan H. Daniels, Tamir Ailon, Emily Miller, Daniel M. Sciubba, Justin S. Smith, Christopher I. Shaffrey, Frank Schwab, Douglas Burton, Robert A. Hart, Richard Hostin, Breton Line, Shay Bess, Christopher P. Ames, International Spine Study Group***

The authors of the International Spine Study Group performed the first analysis of the effect preoperative frailty has on

postoperative changes in health-related quality of life (HRQoL). The Adult Spinal Deformity Frailty Index (ASD-FI) takes into account 40 objective and patient reported variables and can predict major complications and prolonged length of stay following spinal deformity surgery. In this study, the authors stratified 332 patients who underwent adult spinal deformity surgery into nonfrail (135), frail (175), and severely frail (22) cohorts. Compared to nonfrail patients, frail and severely frail patients had worse HRQoL, pain scores, and radiographic deformity pre-operatively. While outcome scores were worse in frail and severely frail patients postoperatively, frail patients improved more than nonfrail patients and were more likely to reach a substantial clinical benefit for multiple HRQoL metrics. The authors conclude that frail patients are more likely to achieve substantial clinical benefit for most HRQoL measures despite higher perioperative risk, while severely frail patients do not have similar improvement in HRQoL to offset the increased surgical risk.

**COMING IN MAY 2018**

**The Most-Cited Works in Severe Traumatic Brain Injury: A Bibliometric Analysis of the 100 Most-Cited Articles**
*Lei Li, Xiaoye Ma, Sajan Pandey, Xianyu Deng, Songyu Chen, Daming Cui, Liang Gao*

**The Risk of Traumatic Brain Injury Occurring Among Patients with Parkinson Disease: A 14-Year Population-Based Study**
*Tee-Tau Eric Nyam, Chung-Han Ho, Yu-Lin Wang, Sher-Wei Lim, Jhi-Joung Wang, Chung-Ching Chio, Jinn-Rung Kuo, Che-Chuan Wang*

**Traumatic Spinal Injury: Global Epidemiology and Worldwide Volume**
*Ramesh Kumar, Jaims Lim, Rania A. Mekary, Abbas Rattani, Michael C. Dewan, Salman Y. Sharif, Enrique Osorio-Fonseca, Kee B. Park*

**Preoperative 3-Dimensional Angiography Data and Intraoperative Real-Time Vascular Data Integrated in Microscope-Based Navigation by Automatic Patient Registration Applying Intraoperative Computed Tomography**
*Barbara Carl, Miriam Bopp, Somar Chehab, Siegfried Bien, Christopher Nimsky*

**Electronic Residency Application Service Application Characteristics Associated with Successful Residency Matching in Neurosurgery in 2009–2016**
*John M. Leschke and Matthew A. Hunt*

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