

Jonathan P. Miller, M.D.



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CURRENT POSITION:

Director, Functional and Restorative Neurosurgery
Assistant Professor of Neurological Surgery
University Hospitals Case Medical Center

ACADEMIC AND HOSPITAL APPOINTMENTS:

2008- Case Western Reserve University, Case Medical Center, Cleveland, Ohio
Present Assistant Professor, Neurological Surgery
2008- Case Western Reserve University, Cleveland, Ohio
Present Director, Medical Student Education, Department of Neurosurgery

Clinical Appointments:

2008- University Hospitals of Cleveland, Case Medical Center, Cleveland, Ohio
Present Director, Functional and Restorative Neurosurgery

EDUCATION & TRAINING:

Education:

1994- Yale University, New Haven, Connecticut
1998 Bachelor of Science
Molecular Biophysics and Biochemistry
1998- Case Western Reserve University School of Medicine, Cleveland, Ohio
2002 Doctor of Medicine
Area of Concentration: Neuroscience

Training:

2002- Case Western Reserve University/ University Hospitals of Cleveland, Cleveland, Ohio
2003 Intern, General Surgery

2003- Case Western Reserve University/ University Hospitals of Cleveland, Cleveland, Ohio
2006 Resident, Neurological Surgery
2006- Oregon Health & Science University, Portland, Oregon
2007 Fellow, Functional & Stereotactic Neurosurgery
2007- Case Western Reserve University/ University Hospitals of Cleveland, Cleveland, Ohio

2008 Chief Resident, Neurological Surgery

HONORS AND AWARDS:

2002 Ivan E. Shalit Prize
2002 Evans-Machlup Prize
2002 Alpha Omega Alpha Honor Medical Society
2003 Hydrocephalus Association Annual Resident's Award
2006 Benedict J. Colombi Clinical Scholar Award
2007 Robert Florin Award
2007 William H. Sweet Young Investigator Award
2007 Ronald Tasker Award
2007 Ohio State Neurosurgical Society Resident Award
2007 Western Neurosurgery Society Clinical Science Award

PROFESSIONAL SOCIETIES:

2002- Present Alpha Omega Alpha Honor Medical Society
2003- Present American Association of Neurological Surgeons
2003- Present American Medical Association
2003- Present Congress of Neurological Surgeons
2003- Present Ohio State Neurosurgical Society
2006- Present Trigeminal Neuralgia Association
2006- Present American Society for Stereotactic and Functional Neurosurgery
2009- Present North American Neuromodulation Society

HOSPITAL COMMITTEES:

2005- 2008 Education Committee, Case Western Reserve University Department of Neurosurgery

GRANTS & SPONSORED RESEARCH:

Principal Investigator
Research Support

2008 Neurosurgery Research and Education Foundation Young Clinician Investigator Award

Source: American Association of Neurological Surgeons

Project Title: Electrophysiological alterations following minimal traumatic brain injury

Description:

This is a pilot study to develop a better understanding of electrophysiologic changes after minimal traumatic brain injury (mTBI). We plan to test the hypothesis that the functional deficits after mTBI: (1) are associated with characteristic electrophysiological changes in specific areas of the brain; (2) may be identified using noninvasive methods such as EEG; and (3) may be reversed to some degree by means of high-frequency field stimulation using a stereotactically implanted electrode.

Role: Principal Investigator

Source: National Institutes of Health

Project Title: In vivo electrophysiology

Description:

This is a collaborative study with the National Institute on Drug Abuse to identify and describe electrophysiological changes that occur during a variety of disease states.

Role: Principal Investigator

BIBLIOGRAPHY:

Original Articles

1. Aliev G, Miller JP, Leifer DW, Obrenovich ME, Shenk JC, Smith MA, Lamanna JC, Perry G, Lust DW, Cohen AR: Ultrastructural analysis of a murine model of congenital hydrocephalus produced by overexpression of transforming growth factor-beta1 in the central nervous system. *J Submicrosc Cytol Pathol* 2006 Jun-Sep;38(2-3):85-91.
2. Miller JP, Fulop SC: Improving resident work hour compliance using a computerized patient information management system. *AANS Neurosurgeon* 2007;16(3)18-23.
3. Acar F, Miller JP, Berk MC, Anderson G, Burchiel KJ: Safety of anterior commissure-posterior commissure-based target calculation of the subthalamic nucleus in functional stereotactic procedures. *Stereotact Funct Neurosurg* 2007;85(6):287-91.
4. Miller JP, Acar F, Hamilton B, Burchiel K: Preoperative visualization of neurovascular anatomy in trigeminal neuralgia. *J Neurosurg* 2008 Mar;108(3):477-82.
5. Miller JP, Acar F, Kaimaktchiev VB, Gultekin SH, Burchiel KJ: Pathology of ilioinguinal neuropathy produced by mesh entrapment: case report and literature review. *Hernia*. 2008 Apr;12(2)213-6.
6. Acar F, Miller JP, Burchiel KJ: Pain relief after cervical ganglionectomy (C2 and C3) for the treatment of medically intractable occipital neuralgia. *Stereotact Funct Neurosurg* 2008;86(2):106-12.
7. Miller JP, Fulop SC, Dashti SR, Robinson S, Cohen AR: Rethinking the indications for the ventriculoperitoneal shunt tap. *J Neurosurg Pediatrics* 2008 Jun;1(6)435-8.
8. Miller JP, Acar F, Burchiel KJ: Trigeminal neuralgia and vascular compression in patients with trigeminal schwannomas: Case Report. *Neurosurgery* 2008 Apr;62(4)E974-5.
9. Acar G, Acar F, Miller JP, Burchiel K: Seizure outcome following transcortical selective amygdalohippocampectomy in mesial temporal lobe epilepsy. *Stereotact Funct Neurosurg* 2008;86(5):314-9.
10. Miller JP, Semaan MT, Einstein DB, Megerian CA, Maciunas RJ: A novel treatment paradigm for glomus jugulare tumors: staged gamma knife radiosurgery after tailored surgical resection. *Stereotact Funct Neurosurg* 2009; 87(1):31-6.
11. Miller JP, Acar F, Burchiel KJ: Significant reduction in stereotactic and functional neurosurgical hardware infection after local neomycin/polymyxin application. *J Neurosurg* 2009 Feb;110(2):247-50.
12. Miller JP, Acar F, Burchiel KJ: Radiographic evaluation of trigeminal neurovascular compression in patients with and without trigeminal neuralgia. *J Neurosurg* 2009 Apr;110(4):627-32.
13. Miller JP, Magill ST, Acar F, Burchiel KJ: Predictors of long-term success after microvascular

decompression for trigeminal neuralgia. *J Neurosurg* 2009 Apr;110(4):620-6.

14. Miller JP, Acar F, Burchiel KJ: Classification of trigeminal neuralgia: clinical, therapeutic, and prognostic implications in a series of 144 patients undergoing microvascular decompression. *J Neurosurg* 2009 Apr 24. [Epub ahead of print].
15. Miller JP, Selman WR. Editorial: Deep brain stimulation for depression. *J Neurosurg* 2009 May 29. [Epub ahead of print]
16. Miller JP, Semaan MT, Maciunas RJ, Einstein DB, Megerian CA: Radiosurgery for glomus tumors. *Oto Clin N Am* 2009; 42: 689–706.
17. Le N, Nesbit G, Buchiel KJ, Miller JP, Hamilton B: Differentiating arterial from venous compression in trigeminal neuralgia using 3D BFFE alone compared to surgical results. *AJNR*, accepted for publication.
18. Zacest AC, Magill ST, Miller JP, Burchiel KJ: Preoperative magnetic resonance imaging in type 2 trigeminal neuralgia. *J Neurosurg*, accepted for publication.

Book Chapters & Review Articles

1. Miller JP, Cohen AR. "Postnatal Surgery for Myelomeningocele." In *Neural Tube Defects: From Origin to Treatment*, edited by Diego Wyszynski, 231-240. New York, NY: Oxford University Press, 2006.
2. Miller JP, Cohen AR. "Surgical Management of Tumors of the Fourth Ventricle." In *Schmidek and Sweet Operative Neurosurgical Techniques: Indications, Methods, and Results, 5th Edition*, edited by Henry Schmidek and David Roberts, 881-913. Philadelphia, PA: Saunders (Elsevier), 2006.
3. Miller JP, Cohen AR. "Split Cord Malformations." In *Surgery of the Pediatric Spine*, edited by Daniel Kim et al., 200-206. New York: Thieme Medical Publishers, 2008.
4. Miller JP, Cohen AR. "Intraventricular Endoscopy." In *Pediatric Neurosurgery*, edited by James Goodrich, 227-232. New York: Thieme Medical Publishers, 2008.
5. Miller JP, Cohen AR. "Encephaloceles of the Anterior Cranial Base." In *Pediatric Neurosurgery*, edited by James Goodrich, 69-75. New York: Thieme Medical Publishers, 2008.
6. Dashti SR, Miller JP, Tarr R, Selman WR. "Vascular Lesions of the Cerebellopontine Angle." In: *Surgery of the Cerebellopontine Angle*, Bambakidis NC, Megerian CA, Spetzler RF (Eds). People's Medical Publishing House, Decker, Inc., Shelton, Connecticut, pp. 287-299, 2009.
7. Miller JP, Burchiel KJ. Microvascular decompression for trigeminal neuralgia. In *Youmans Textbook of Neurological Surgery, 6th Edition*, edited by H. Richard Winn. Philadelphia, PA: Saunders (Elsevier), 2010.

Web Publications

1. Miller JP, Edmison J, Fondran J, Gorodeski E, Huang R, Kim E, Manista A, Oldenburg F, Ryan D. "D3J Online: A Summary of the Curriculum of the First Two Years at the School of Medicine of Case Western Reserve University." <http://d3jonline.tripod.com>, 2004.
2. Miller JP, Chowdhry S, Fulop SC, Hoffer SA. "Neurosurgery Survival Guide: A Comprehensive Guide to Neurosurgical Diagnosis and Treatment." <http://d3jonline.tripod.com/neurosurgery>, 2006.