

Adnan H. Siddiqui

Dr. Adnan Siddiqui, MD, PhD, is a Professor of Neurosurgery and Radiology who joined UBNS in January 2007. He completed fellowship training in Interventional Neuroradiology, Cerebrovascular Surgery and Neurocritical Care from Thomas Jefferson University in Philadelphia. He completed his Neurosurgical residency at Upstate Medical University and received his PhD in Neuroscience from the University of Rochester and medical degree from Aga Khan University, Pakistan. Though Dr. Siddiqui is well trained in all general neurosurgical procedures, including brain tumor, spine and peripheral nerve surgery, because of specialized training, he has gravitated toward vascular diseases involving the brain and spinal cord.

Dr. Siddiqui has special interest and expertise in the performance of complementary microsurgical, radiosurgical and endovascular techniques for the comprehensive management of cerebrovascular conditions. This spectrum of disease includes aneurysms and arteriovenous malformations, as well as dural, cavernous and spinal fistulae. He has special interests in acute stroke management with intra-arterial thrombolysis, as well as endovascular and microsurgical management of extracranial and intracranial vascular occlusive disease. Other clinical interests include endovascular management of intractable epistaxis; preoperative head, neck, and brain tumor embolization; resection of skull base tumors; endoscopic surgery for aneurysms and pituitary tumors; third ventriculostomy; and arachnoid cysts.

The Neuroendovascular Research and Stroke Service is led by Dr. Siddiqui, who is proud to lead UB's Department of Neurosurgery, which was ranked 7th in academic impact in North America by the Journal of Neurosurgery. He serves as a reviewer for Stroke, Neurosurgery, Journal of Neurosurgery and Journal of Neurointerventional Surgery as well as many others. He has over 100 peer reviewed publications, more than 50 chapters and has been invited to more than 200 national and international lectureships.

Dr. Siddiqui is currently a member of the Executive Council of the Joint Section of Cerebrovascular Surgery of the American Association of Neurological Surgery (AANS) and is Chairman of the Nominating Committee. He has served on Endovascular Task Force of AANS and been on multiple scientific committees on AANS, Society of Neurointerventional Surgery and the Congress of Neurological Surgeons.

Dr. Siddiqui is married and has three children. He is a proud Buffalonian who is challenged and invigorated by taking care of neurosurgical patients and their families. He is grateful for the opportunity to work at the Gates Vascular Institute, a facility with some of the world's best technologies, where he and other experts can interact with leading researchers in order to make scientific advancements at the Toshiba Stroke & Vascular Research Center of which he is the Director.

Medical School Aga Khan University, Pakistan

Internship SUNY Upstate Medical University, Surgical Internship

Residency SUNY Upstate Medical University, Neurosurgery; Children's Hospital (Boston), Pediatric Neurosurgery; University of Rochester, Neurology

Fellowship Thomas Jefferson University, Philadelphia

Board Certification Neurological Surgery

Clinical Interests Dr. Siddiqui has special interest and expertise in the performance of complementary

microsurgical, radiosurgical and endovascular techniques for the comprehensive management of cerebrovascular conditions. This spectrum of disease includes aneurysms and arteriovenous malformations, as well as dural, cavernous and spinal fistulae. He has special interests in acute stroke management with intra-arterial thrombolysis, as well as endovascular and microsurgical management of extracranial and intracranial vascular occlusive disease. Other clinical interests include endovascular management of intractable epistaxis; preoperative head, neck, and brain tumor embolization; resection of skull base tumors; endoscopic surgery for aneurysms and pituitary tumors; third ventriculostomy; and arachnoid cysts.

Professional Highlights Dr. Siddiqui received the George Thorn Young Investigator Award from the School of Medicine, which is given to faculty of exceptional talent who are less than 45 years of age (2012). Dr. Siddiqui also received the Arnold P. Gold Foundation National Award for Humanism and Excellence in Teaching (2004); the National Research Service Award in Neuroscience (1996 and 1997); and the Bartlett Award, best presentation at a National Meeting, University of Rochester (1994).

Memberships Western New York Vascular Society; American Association of Neurological Surgery/Congress of Neurological Surgery; Millard Fillmore Gates Hospital, Kaleida Health; Health Sciences Institutional Review Board Committee A, University at Buffalo; Board of Inter-Societal Accreditation of Vascular Laboratories; American Heart Association; American Society of Neuroimaging; Council of State Neurosurgical Societies (CSNS); Society of Neurointerventional Surgery; and the Western New York Vascular Society

Selected Publications

1: Albers GW, Goyal M, Jahan R, Bonafe A, Diener HC, Levy EI, Pereira VM, Cognard C, Cohen DJ, Hacke W, Jansen O, Jovin TG, Mattle HP, Nogueira RG, Siddiqui AH, Yavagal DR, Baxter BW, Devlin TG, Lopes DK, Reddy VK, du Mesnil de Rochemont R, Singer OC, Bammer R, Saver JL. Ischemic core and hypoperfusion volumes predict infarct size in SWIFT PRIME. *Ann Neurol*. 2015 Oct 17. doi: 10.1002/ana.24543. [Epub ahead of print] PubMed PMID: 26476022.

2: Sonig A, Lin N, Krishna C, Natarajan SK, Mokin M, Hopkins LN, Snyder KV, Levy EI, Siddiqui AH. Impact of transfer status on hospitalization cost and discharge disposition for acute ischemic stroke across the US. *J Neurosurg*. 2015 Oct 9:1-10. [Epub ahead of print] PubMed PMID: 26452123.

3: Mowla A, Singh K, Mehla S, Ahmed MK, Shirani P, Kamal H, Krishna C, Sawyer RN Jr, Ching M, Siddiqui AH, Levy EI, Snyder KV, Crumlish A, Hopkins LN. Is acute reperfusion therapy safe in acute ischemic stroke patients who harbor unruptured intracranial aneurysm? *Int J Stroke*. 2015 Sep 17. doi: 10.1111/ijvs.12616. [Epub ahead of print] PubMed PMID: 26377963.

4: MacIsaac RL, Khatri P, Bendszus M, Bracard S, Broderick J, Campbell B, Ciccone A, Dávalos A, Davis SM, Demchuk A, Diener HC, Dippel D, Donnan GA, Fiehler J, Fiorella D, Goyal M, Hacke W, Hill MD, Jahan R, Jauch E, Jovin T, Kidwell CS, Liebeskind D, Majoie CB, Martins SC, Mitchell P, Mocco J, Muir KW, Nogueira R, Saver JL, Schonewille WJ, Siddiqui AH, Thomalla G, Tomsick TA, Turk AS, White P, Zaidat O, Lees KR; VISTA Endovascular collaboration. A collaborative sequential meta-analysis of individual patient data from randomized trials of endovascular therapy and tPA vs. tPA alone for acute ischemic stroke: Thrombectomy And tPA (TREAT) analysis: statistical analysis plan for a sequential meta-analysis performed within the VISTA-Endovascular collaboration. *Int J Stroke*. 2015 Sep 9. doi: 10.1111/ijvs.12622. [Epub ahead of print] PubMed PMID: 26352438.

5: Fanous AA, Natarajan SK, Jowdy PK, Dumont TM, Mokin M, Yu J, Goldstein A, Wach MM, Budny JL, Hopkins LN, Snyder KV, Siddiqui AH, Levy EI. High-Risk Factors in Symptomatic Patients Undergoing

Carotid Artery Stenting With Distal Protection: Buffalo Risk Assessment Scale (BRASS). *Neurosurgery*. 2015 Oct;77(4):531-43. doi: 10.1227/NEU.0000000000000871. PubMed PMID: 26308641.

6: Natarajan SK, Sonig A, Mocco J, Dumont TM, Thind H, Hartney ML, Snyder KV, Hopkins LN, Siddiqui AH, Levy EI. Primary Stenting for Acute Ischemic Stroke Using the Enterprise Intracranial Stent: 2-Year Results of a Phase-I Trial. *J Vasc Interv Neurol*. 2015 Jul;8(3):62-7. PubMed PMID: 26301034; PubMed Central PMCID: PMC4535596.

7: Sorkin GC, Dumont TM, Mokin M, Eller JL, Natarajan SK, Levy EI, Siddiqui AH. Hyperacute Carotid Stent Thrombosis During Emergent Revascularization Treated with Intraarterial Eptifibatide After Systemic Administration of Recombinant Tissue Plasminogen Activator. *J Vasc Interv Neurol*. 2015 Jul;8(3):50-5. PubMed PMID: 26301032; PubMed Central PMCID: PMC4535607.

8: Rangel-Castilla L, Cress MC, Munich SA, Sonig A, Krishna C, Gu EY, Snyder KV, Hopkins LN, Siddiqui AH, Levy EI. Feasibility, Safety, and Periprocedural Complications of Pipeline Embolization for Intracranial Aneurysm Treatment Under Conscious Sedation: University at Buffalo Neurosurgery Experience. *Neurosurgery*. 2015 Sep;11 Suppl 3:426-30. doi: 10.1227/NEU.0000000000000864. PubMed PMID: 26284351.

9: Brinjikji W, Lanzino G, Cloft HJ, Siddiqui AH, Hanel RA, Kallmes DF. Platelet Testing is Associated with Worse Clinical Outcomes for Patients Treated with the Pipeline Embolization Device. *AJNR Am J Neuroradiol*. 2015 Aug 6. [Epub ahead of print] PubMed PMID: 26251435.

10: Brinjikji W, Lanzino G, Cloft HJ, Siddiqui AH, Kallmes DF. Risk Factors for Hemorrhagic Complications following Pipeline Embolization Device Treatment of Intracranial Aneurysms: Results from the International Retrospective Study of the Pipeline Embolization Device. *AJNR Am J Neuroradiol*. 2015 Aug 6. [Epub ahead of print] PubMed PMID: 26251427.

11: Fiorella D, Mocco J, Arthur AS, Lavine S, Albuquerque FC, Frei D, Turner RD, Turk A, Siddiqui AH, Mack WJ, Alexandrov A, Hirsch JA, Tarr RW. Too much guidance. *J Neurointerv Surg*. 2015 Sep;7(9):626-7. doi: 10.1136/neurintsurg-2015-011957. Epub 2015 Jul 23. PubMed PMID: 26206804.

12: Damiano RJ, Ma D, Xiang J, Siddiqui AH, Snyder KV, Meng H. Finite element modeling of endovascular coiling and flow diversion enables hemodynamic prediction of complex treatment strategies for intracranial aneurysm. *J Biomech*. 2015 Sep 18;48(12):3332-40. doi: 10.1016/j.jbiomech.2015.06.018. Epub 2015 Jun 27. PubMed PMID: 26169778.

13: Sahlein DH, Fouladvand M, Becske T, Saatci I, McDougall CG, Szikora I, Lanzino G, Moran CJ, Woo HH, Lopes DK, Berez AL, Cher DJ, Siddiqui AH, Levy EI, Albuquerque FC, Fiorella DJ, Berentei Z, Marosfoi M, Cekirge SH, Kallmes DF, Nelson PK. Neuroophthalmological outcomes associated with use of the Pipeline Embolization Device: analysis of the PUFs trial results. *J Neurosurg*. 2015 Oct;123(4):897-905. doi: 10.3171/2014.12.JNS141777. Epub 2015 Jul 10. PubMed PMID: 26162031.

14: Xiang J, Antiga L, Varble N, Snyder KV, Levy EI, Siddiqui AH, Meng H. AView: An Image-based Clinical Computational Tool for Intracranial Aneurysm Flow Visualization and Clinical Management. *Ann Biomed Eng*. 2015 Jun 23. [Epub ahead of print] PubMed PMID: 26101034.

15: Xiang J, Damiano RJ, Lin N, Snyder KV, Siddiqui AH, Levy EI, Meng H. High-fidelity virtual stenting: modeling of flow diverter deployment for hemodynamic characterization of complex intracranial aneurysms. *J Neurosurg*. 2015 Oct;123(4):832-40. doi: 10.3171/2014.11.JNS14497. Epub 2015 Jun 19. PubMed PMID: 26090829.

16: Munich SA, Mokin M, Snyder KV, Siddiqui AH, Hopkins LN, Levy EI. Guest Editorial: An Update on

- Stroke Intervention. Neurosurgery. 2015 Sep;77(3):313-20. doi: 10.1227/NEU.0000000000000828. PubMed PMID: 26080070.
- 17: Mokin M, Morr S, Natarajan SK, Lin N, Snyder KV, Hopkins LN, Siddiqui AH, Levy EI. Response to letter to the editor. J Neurointerv Surg. 2015 Jun 12. pii: neurintsurg-2015-011869. doi: 10.1136/neurintsurg-2015-011869. [Epub ahead of print] PubMed PMID: 26071385.
- 18: Mokin M, Lopes DK, Binning MJ, Veznedaroglu E, Liebman KM, Arthur AS, Doss VT, Levy EI, Siddiqui AH. Endovascular treatment of cerebral venous thrombosis: Contemporary multicenter experience. Interv Neurol. 2015 Aug;21(4):520-6. doi: 10.1177/1591019915583015. Epub 2015 Jun 8. PubMed PMID: 26055685.
- 19: Munich SA, Cress MC, Rangel-Castilla L, Krishna C, Siddiqui AH, Snyder KV. Importance of repeat angiography in the diagnosis of iatrogenic anterior cerebral artery territory pseudoaneurysm following endoscopic sinus surgery. J Neurointerv Surg. 2015 May 20. pii: neurintsurg-2015-011693. doi: 10.1136/neurintsurg-2015-011693.rep. [Epub ahead of print] PubMed PMID: 25994943.
- 20: Munich SA, Cress MC, Rangel-Castilla L, Krishna C, Siddiqui AH, Snyder KV. Importance of repeat angiography in the diagnosis of iatrogenic anterior cerebral artery territory pseudoaneurysm following endoscopic sinus surgery. BMJ Case Rep. 2015 May 15;2015. pii: bcr2015011693. doi: 10.1136/bcr-2015-011693. PubMed PMID: 25979961.
- 21: Khatri P, Hacke W, Fiehler J, Saver JL, Diener HC, Bendszus M, Bracard S, Broderick J, Campbell B, Ciccone A, Dávalos A, Davis S, Demchuk AM, Dippel D, Donnan G, Fiorella D, Goyal M, Hill MD, Jauch EC, Jovin TG, Kidwell CS, Majoie C, Martins SC, Mitchell P, Mocco J, Muir K, Nogueira RG, Schonewille WJ, Siddiqui AH, Thomalla G, Tomsick TA, Turk AS, White PM, Zaidat OO, Liebeskind DS, Fulton R, Lees KR; VISTA-Endovascular Collaboration. State of acute endovascular therapy: report from the 12th thrombolysis, thrombectomy, and acute stroke therapy conference. Stroke. 2015 Jun;46(6):1727-34. doi: 10.1161/STROKEAHA.115.008782. Epub 2015 May 5. PubMed PMID: 25944325.
- 22: Saver JL, Goyal M, Bonafe A, Diener HC, Levy EI, Pereira VM, Albers GW, Cognard C, Cohen DJ, Hacke W, Jansen O, Jovin TG, Mattle HP, Nogueira RG, Siddiqui AH, Yavagal DR, Baxter BW, Devlin TG, Lopes DK, Reddy VK, du Mesnil de Rochemont R, Singer OC, Jahan R; SWIFT PRIME Investigators. Stent-retriever thrombectomy after intravenous t-PA vs. t-PA alone in stroke. N Engl J Med. 2015 Jun 11;372(24):2285-95. doi: 10.1056/NEJMoa1415061. Epub 2015 Apr 17. PubMed PMID: 25882376.
- 23: Siddiqui AH, Soh PB. Changes in cerebral blood flow in children with sickle cell disease after splenectomy. Pediatr Hematol Oncol. 2015 May;32(4):269-72. doi: 10.3109/08880018.2015.1014589. Epub 2015 Apr 14. PubMed PMID: 25871740.
- 24: Ogilvy CS, Chua MH, Fusco MR, Griessenauer CJ, Harrigan MR, Sonig A, Siddiqui AH, Levy EI, Snyder K, Avery M, Mitha A, Shores J, Hoh BL, Thomas AJ. Validation of a System to Predict Recanalization After Endovascular Treatment of Intracranial Aneurysms. Neurosurgery. 2015 Aug;77(2):168-73; discussion 173-4. doi: 10.1227/NEU.0000000000000744. PubMed PMID: 25850603.
- 25: Rangel-Castilla L, Gandhi S, Munich SA, Cress MC, Sonig A, Krishna C, Hopkins LN, Snyder KV, Levy EI, Siddiqui AH. Experience with vertebral artery origin stenting and ostium dilatation: results of treatment and clinical outcomes. J Neurointerv Surg. 2015 Apr 2. pii: neurintsurg-2015-011655. doi: 10.1136/neurintsurg-2015-011655. [Epub ahead of print] PubMed PMID: 25838198.
- 26: Fanous AA, Lipinski LJ, Krishna C, Roger EP, Siddiqui AH, Levy EI, Leonardo J, Pollina J. The Impact of Preoperative Angiographic Identification of the Artery of Adamkiewicz on Surgical Decision Making in Patients Undergoing Thoracolumbar Corpectomy. Spine (Phila Pa 1976). 2015 Aug 1;40(15):1194-9.

doi: 10.1097/BRS.0000000000000909. PubMed PMID: 25816140.

27: Zaidat OO, Fitzsimmons BF, Woodward BK, Wang Z, Killer-Oberpfalzer M, Wakhloo A, Gupta R, Kirshner H, Megerian JT, Lesko J, Pitzer P, Ramos J, Castonguay AC, Barnwell S, Smith WS, Gress DR; VISSIT Trial Investigators. Effect of a balloon-expandable intracranial stent vs medical therapy on risk of stroke in patients with symptomatic intracranial stenosis: the VISSIT randomized clinical trial. *JAMA*. 2015 Mar 24-31;313(12):1240-8. doi: 10.1001/jama.2015.1693. PubMed PMID: 25803346.

28: Saver JL, Goyal M, Bonafe A, Diener HC, Levy EI, Pereira VM, Albers GW, Cognard C, Cohen DJ, Hacke W, Jansen O, Jovin TG, Mattle HP, Nogueira RG, Siddiqui AH, Yavagal DR, Devlin TG, Lopes DK, Reddy V, du Mesnil de Rochemont R, Jahan R; SWIFT PRIME Investigators. Solitaire™ with the Intention for Thrombectomy as Primary Endovascular Treatment for Acute Ischemic Stroke (SWIFT PRIME) trial: protocol for a randomized, controlled, multicenter study comparing the Solitaire revascularization device with IV tPA with IV tPA alone in acute ischemic stroke. *Int J Stroke*. 2015 Apr;10(3):439-48. doi: 10.1111/ijvs.12459. PubMed PMID: 25777831; PubMed Central PMCID: PMC4405096.

29: Lin N, Wong AK, Lipinski LJ, Mokin M, Siddiqui AH. Reversible changes in diffusion- and perfusion-based imaging in cerebral venous sinus thrombosis. *J Neurointerv Surg*. 2015 Feb 17. pii: neurintsurg-2014-011447.rep. doi: 10.1136/neurintsurg-2014-011447.rep. [Epub ahead of print] PubMed PMID: 25691695.

30: Lin N, Wong AK, Lipinski LJ, Mokin M, Siddiqui AH. Reversible changes in diffusion- and perfusion-based imaging in cerebral venous sinus thrombosis. *BMJ Case Rep*. 2015 Feb 12;2015. pii: bcr2014011447. doi: 10.1136/bcr-2014-011447. PubMed PMID: 25678607.

31: Mokin M, Setlur Nagesh SV, Ionita CN, Mocco J, Siddiqui AH. Stent retriever thrombectomy with the Cover accessory device versus proximal protection with a balloon guide catheter: in vitro stroke model comparison. *J Neurointerv Surg*. 2015 Feb 12. pii: neurintsurg-2014-011617. doi: 10.1136/neurintsurg-2014-011617. [Epub ahead of print] PubMed PMID: 25676149.

32: Dumont TM, Kan P, Snyder KV, Hopkins LN, Siddiqui AH, Levy EI. A proposed grading system for endovascular treatment of cerebral arteriovenous malformations: Buffalo score. *Surg Neurol Int*. 2015 Jan 7;6:3. doi: 10.4103/2152-7806.148847. eCollection 2015. PubMed PMID: 25657856; PubMed Central PMCID: PMC4310056.

33: Mokin M, Kan P, Sivakanthan S, Veznedaroglu E, Binning MJ, Liebman KM, Jethwa PR, Turner RD 4th, Turk AS, Natarajan SK, Siddiqui AH, Levy EI. Endovascular therapy of wake-up strokes in the modern era of stent retriever thrombectomy. *J Neurointerv Surg*. 2015 Jan 29. pii: neurintsurg-2014-011586. doi: 10.1136/neurintsurg-2014-011586. [Epub ahead of print] PubMed PMID: 25634902.

34: Krishna C, Sonig A, Natarajan SK, Siddiqui AH. The expanding realm of endovascular neurosurgery: flow diversion for cerebral aneurysm management. *Methodist DeBakey Cardiovasc J*. 2014 Oct-Dec;10(4):214-9. doi: 10.14797/mdcj-10-4-214. Review. PubMed PMID: 25624975; PubMed Central PMCID: PMC4300059.

35: Lin N, Brouillard AM, Xiang J, Sonig A, Mokin M, Natarajan SK, Krishna C, Hopkins LN, Snyder KV, Siddiqui AH, Levy EI. Endovascular management of adjacent tandem intracranial aneurysms: utilization of stent-assisted coiling and flow diversion. *Acta Neurochir (Wien)*. 2015 Mar;157(3):379-87. doi: 10.1007/s00701-014-2318-z. Epub 2015 Jan 9. PubMed PMID: 25572632.

36: Kogan M, Natarajan SK, Kim N, Sawyer RN, Snyder KV, Siddiqui AH. Third nerve palsy following

- carotid artery dissection and posterior cerebral artery thrombectomy: Case report and review of the literature. *Surg Neurol Int.* 2014 Nov 28;5(Suppl 14):S497-500. doi: 10.4103/2152-7806.145653. eCollection 2014. PubMed PMID: 25525555; PubMed Central PMCID: PMC4258721.
- 37: Xiang J, Yu J, Snyder KV, Levy EI, Siddiqui AH, Meng H. Hemodynamic-morphological discriminant models for intracranial aneurysm rupture remain stable with increasing sample size. *J Neurointerv Surg.* 2014 Dec 8. pii: neurintsurg-2014-011477. doi: 10.1136/neurintsurg-2014-011477. [Epub ahead of print] PubMed PMID: 25488922.
- 38: Parchim NF, Wang W, Iriyama T, Ashimi OA, Siddiqui AH, Blackwell S, Sibai B, Kellems RE, Xia Y. Neurokinin 3 receptor and phosphocholine transferase: missing factors for pathogenesis of C-reactive protein in preeclampsia. *Hypertension.* 2015 Feb;65(2):430-9. doi: 10.1161/HYPERTENSIONAHA.114.04439. Epub 2014 Dec 1. PubMed PMID: 25452470.
- 39: Xiang J, Siddiqui AH, Meng H. The effect of inlet waveforms on computational hemodynamics of patient-specific intracranial aneurysms. *J Biomech.* 2014 Dec 18;47(16):3882-90. doi: 10.1016/j.jbiomech.2014.09.034. Epub 2014 Oct 13. PubMed PMID: 25446264; PubMed Central PMCID: PMC4261154.
- 40: Mokin M, Setlur Nagesh SV, Ionita CN, Levy EI, Siddiqui AH. Comparison of modern stroke thrombectomy approaches using an in vitro cerebrovascular occlusion model. *AJNR Am J Neuroradiol.* 2015 Mar;36(3):547-51. doi: 10.3174/ajnr.A4149. Epub 2014 Nov 6. PubMed PMID: 25376809.
- 41: Morr S, Lin N, Siddiqui AH. Carotid artery stenting: current and emerging options. *Med Devices (Auckl).* 2014 Oct 20;7:343-55. doi: 10.2147/MDER.S46044. eCollection 2014. Review. PubMed PMID: 25349483; PubMed Central PMCID: PMC4208632.
- 42: Ionita CN, Garcia VL, Bednarek DR, Snyder KV, Siddiqui AH, Levy EI, Rudin S. Effect of injection technique on temporal parametric imaging derived from digital subtraction angiography in patient specific phantoms. *Proc SPIE Int Soc Opt Eng.* 2014 Mar 13;9038:90380L. PubMed PMID: 25302010; PubMed Central PMCID: PMC4187403.
- 43: Ionita CN, Mokin M, Varble N, Bednarek DR, Xiang J, Snyder KV, Siddiqui AH, Levy EI, Meng H, Rudin S. Challenges and limitations of patient-specific vascular phantom fabrication using 3D Polyjet printing. *Proc SPIE Int Soc Opt Eng.* 2014 Mar 13;9038:90380M. PubMed PMID: 25300886; PubMed Central PMCID: PMC4188370.
- 44: Zivadinov R, Bastianello S, Dake MD, Ferral H, Haacke EM, Haskal ZJ, Hubbard D, Liasis N, Mandato K, Sclafani S, Siddiqui AH, Simka M, Zamboni P; International Society for Neurovascular Disease. Recommendations for multimodal noninvasive and invasive screening for detection of extracranial venous abnormalities indicative of chronic cerebrospinal venous insufficiency: a position statement of the International Society for Neurovascular Disease. *J Vasc Interv Radiol.* 2014 Nov;25(11):1785-94.e17. doi: 10.1016/j.jvir.2014.07.024. Epub 2014 Sep 23. PubMed PMID: 25255703.
- 45: Lin N, Brouillard AM, Krishna C, Mokin M, Natarajan SK, Sonig A, Snyder KV, Levy EI, Siddiqui AH. Use of coils in conjunction with the pipeline embolization device for treatment of intracranial aneurysms. *Neurosurgery.* 2015 Feb;76(2):142-9. doi: 10.1227/NEU.0000000000000579. PubMed PMID: 25255261.
- 46: Lin N, Brouillard AM, Snyder KV, Levy EI, Siddiqui AH. Non-galenic arteriovenous fistulas in adults: transarterial embolization and literature review. *J Neurointerv Surg.* 2015 Nov;7(11):835-40. doi: 10.1136/neurintsurg-2014-011352. Epub 2014 Sep 18. Review. PubMed PMID: 25237068.

- 47: Lin N, Brouillard AM, Keigher KM, Lopes DK, Binning MJ, Liebman KM, Veznedaroglu E, Magarik JA, Mocco J, Duckworth EA, Arthur AS, Ringer AJ, Snyder KV, Levy EI, Siddiqui AH. Utilization of Pipeline embolization device for treatment of ruptured intracranial aneurysms: US multicenter experience. *J Neurointerv Surg.* 2015 Nov;7(11):808-15. doi: 10.1136/neurintsurg-2014-011320. Epub 2014 Sep 17. PubMed PMID: 25230839.
- 48: Mokin M, Morr S, Fanous AA, Shallwani H, Natarajan SK, Levy EI, Snyder KV, Siddiqui AH. Correlation between cerebral blood volume values and outcomes in endovascular therapy for acute ischemic stroke. *J Neurointerv Surg.* 2015 Oct;7(10):705-8. doi: 10.1136/neurintsurg-2014-011279. Epub 2014 Aug 21. PubMed PMID: 25147229.
- 49: Wack DS, Snyder KV, Seals KF, Siddiqui AH. Masked smoothing using separable kernels for CT perfusion images. *BMC Med Imaging.* 2014 Aug 21;14:28. doi: 10.1186/1471-2342-14-28. PubMed PMID: 25145879; PubMed Central PMCID: PMC4155389.
- 50: Siddiqui AH, Tauheed N, Ahmad A, Mohsin Z. Pulmonary function in advanced uncomplicated singleton and twin pregnancy. *J Bras Pneumol.* 2014 May-Jun;40(3):244-9. English, Portuguese. PubMed PMID: 25029647; PubMed Central PMCID: PMC4109196.
- 51: Shakir HJ, Garson AD, Sorkin GC, Mokin M, Eller JL, Dumont TM, Popat SR, Leonardo J, Siddiqui AH. Combined use of covered stent and flow diversion to seal iatrogenic carotid injury with vessel preservation during transsphenoidal endoscopic resection of clival tumor. *Surg Neurol Int.* 2014 May 31;5:81. doi: 10.4103/2152-7806.133638. eCollection 2014. PubMed PMID: 25024881; PubMed Central PMCID: PMC4093738.
- 52: Ahsan A, Salman KA, Alam S, Siddiqui AH, Naeem SS, Ahmad A, Khan IM. Alpha-1 antitrypsin, a diagnostic and prognostic marker of vernal keratoconjunctivitis. *J Clin Diagn Res.* 2014 May;8(5):CC08-10. doi: 10.7860/JCDR/2014/6342.4362. Epub 2014 May 15. PubMed PMID: 24995171; PubMed Central PMCID: PMC4079992.
- 53: Mokin M, Snyder KV, Siddiqui AH, Hopkins LN, Levy EI. Endovascular management and treatment of acute ischemic stroke. *Neurosurg Clin N Am.* 2014 Jul;25(3):583-92. doi: 10.1016/j.nec.2014.04.013. Epub 2014 May 20. Review. PubMed PMID: 24994092.
- 54: Eller JL, Snyder KV, Siddiqui AH, Levy EI, Hopkins LN. Endovascular treatment of carotid stenosis. *Neurosurg Clin N Am.* 2014 Jul;25(3):565-82. doi: 10.1016/j.nec.2014.04.012. Epub 2014 Jun 2. Review. PubMed PMID: 24994091.
- 55: Liaw N, Fox JM, Siddiqui AH, Meng H, Kolega J. Endothelial nitric oxide synthase and superoxide mediate hemodynamic initiation of intracranial aneurysms. *PLoS One.* 2014 Jul 3;9(7):e101721. doi: 10.1371/journal.pone.0101721. eCollection 2014. PubMed PMID: 24992254; PubMed Central PMCID: PMC4081806.
- 56: Yoon JW, Siddiqui AH, Dumont TM, Levy EI, Hopkins LN, Lanzino G, Lopes DK, Moftakhar R, Billingsley JT, Welch BG, Boulos AS, Yamamoto J, Tawk RG, Ringer AJ, Hanel RA; Endovascular Neurosurgery Research Group. Feasibility and safety of pipeline embolization device in patients with ruptured carotid blister aneurysms. *Neurosurgery.* 2014 Oct;75(4):419-29; discussion 429. doi: 10.1227/NEU.0000000000000487. PubMed PMID: 24991709.
- 57: Siddiqui AH, Zivadinov R, Benedict RH, Karmon Y, Yu J, Hartney ML, Marr KL, Valnarov V, Kennedy CL, Ramanathan M, Ramasamy DP, Dolic K, Hojnacki DW, Carl E, Levy EI, Hopkins LN, Weinstock-Guttman B. Prospective randomized trial of venous angioplasty in MS (PREMiSe). *Neurology.* 2014 Jul 29;83(5):441-9. doi: 10.1212/WNL.0000000000000638. Epub 2014 Jun 27. Erratum in: *Neurology.*

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Last update: **2015/10/20 12:08**

