Middle cerebral artery M2 segment aneurysm

see also Fusiform aneurysm of the M2 segment of the middle cerebral artery

Treatment

Coiling of MCA aneurysms could be a technically feasible and clinically effective treatment strategy with acceptable angiographic and clinical outcomes. However, the safety and efficacy of this technique as compared to surgical clipping remains to be ascertained [1].

Martínez-Galdámez et al. demonstrated that the use of a new low-profile flow diverter, SVB device, for the treatment of intracranial aneurysms is feasible and technically safe [2]

Case reports

A 43-year-old man fell from a 1m-high truck loading platform and sustained an injury in the occiput. On admission, he was alert and neurologically intact. Computed tomography(CT)showed hemorrhage in the right sylvian fissure and parenchyma adjacent to the sphenoid wing. Magnetic resonance angiography detected no abnormalities. The course was uneventful for 11 days. However, on the 12th day, he spontaneously manifested with stupor. CT and CT angiography revealed expansion of the hemorrhage and an aneurysm arising from the origin of the M2 segment of the right middle cerebral artery. After superficial temporal artery to middle cerebral artery bypass, the aneurysm, a reddish pulsatile mass, was removed from the origin of the torn M2 segment, and the laceration was sutured. The histological diagnosis was false aneurysm. He recovered and was discharged 4 months after the trauma. Traumatic cerebral aneurysms are rare in the proximal segment of the middle cerebral artery. However, they should be distinguished from nontraumatic true aneurysms in the same region and treated as false aneurysms, which are major and critical traumatic aneurysms, for favorable outcomes. [3].

A 42-year-old woman who presented with a typical history of subarachnoid hemorrhage. Digital subtraction angiography (DSA) showed an aneurysmal dilatation on the frontal M2 segment of the left middle cerebral artery (MCA). The patient was treated surgically, and multiple cysts were found in the left carotid and sylvian cisterns, associated with a dense inflammatory exudate that involved the MCA. The cysts were removed, and a fusiform aneurysmal dilatation was identified. The lesion was not amenable to direct clipping, so the authors wrapped it. Histopathological analysis of the removed cysts revealed the typical pattern of subarachnoid neurocysticercosis. The patient received cysticidal therapy with albendazole and corticosteroids, and she recovered uneventfully. Follow-up DSA performed 6 months after surgery showed complete resolution of the aneurysm. The authors performed a review of the literature and believe that there is sufficient evidence to affirm that the

subarachnoid form of neurocysticercosis may lead to the development of an IIA and that Taenia solium should be listed among the possible etiological agents of IIAs, along with bacterial and fungal agents [4)].

9: Wang L, Lu S, Cai L, Qian H, Tanikawa R, Shi X. Internal maxillary artery bypass for the treatment of complex middle cerebral artery aneurysms. Neurosurg Focus. 2019 Feb 1;46(2):E10. doi: 10.3171/2018.11.FOCUS18457. PubMed PMID: 30717068.

10: Gandhi S, Rodriguez RL, Tabani H, Burkhardt JK, Benet A, Lawton MT. Double-Barrel Extracranial-Intracranial Bypass and Trapping of Dolichoectatic Middle Cerebral Artery Aneurysms: 3-Dimensional Operative Video. Oper Neurosurg (Hagerstown). 2019 Jul 1;17(1):E14-E15. doi: 10.1093/ons/opy311. PubMed PMID: 30715471.

11: Cheng CY, Qazi Z, Sekhar LN. Left External Carotid Artery to the Middle Cerebral Artery Bypass with Radial Artery Graft and Clip Reconstruction of a Large Middle Cerebral Artery Fusiform Aneurysm: 3-Dimensional Operative Video. Oper Neurosurg (Hagerstown). 2019 Oct 1;17(4):E159-E160. doi: 10.1093/ons/opy406. PubMed PMID: 30649501.

12: Jeon HJ, Park JH, Lee JY, Jeon HJ, Park SW, Cho BM. Endovascular Coiling for a Wide-neck Bifurcated Aneurysm with Anterograde Horizontal Stenting via Microcatheter Looping: A Technical Case Report. J Cerebrovasc Endovasc Neurosurg. 2018 Sep;20(3):181-186. doi: 10.7461/jcen.2018.20.3.181. Epub 2018 Sep 30. PubMed PMID: 30397590; PubMed Central PMCID: PMC6199400.

13: Wang L, Qian H, Shi X. The “SHI” Internal Maxillary Bypass for Giant Fusiform Middle Cerebral Artery Bifurcation Aneurysms: 2-Dimensional Operative Video. World Neurosurg. 2019 Feb;122:58. doi: 10.1016/j.wneu.2018.10.063. Epub 2018 Oct 19. PubMed PMID: 30347305.

14: Miura S, Katsube T, Nakamizo S, Sakagami Y. [A Case of Aplastic or Twig-like Middle Cerebral Artery with a Ruptured Aneurysm at an Anomalous Collateral Artery]. Brain Nerve. 2018 Sep;70(9):1033-1036. doi: 10.11477/mf.1416201125. Japanese. PubMed PMID: 30177581.

15: Mills MT, Zafar A, Choudhari KA, Smith A, Coley S, Jankowski S, Randall M, Patel UJ. Management of Concomitant Moyamoya Disease, Arterial Venous Malformation, and Intracranial Aneurysm: Case Illustration, Literature Review, and Management Algorithm. World Neurosurg. 2018 Nov;119:262-266. doi: 10.1016/j.wneu.2018.08.017. Epub 2018 Aug 11. Review. PubMed PMID: 30107248.

16: Mascitelli JR, Gandhi S, Tayebi Meybodi A, Lawton MT. The oculomotor-tentorial triangle. Part 2: a microsurgical workspace for vascular lesions in the crural and ambient cisterns. J Neurosurg. 2018 Jun 1:1-11. doi: 10.3171/2018.2.JNS173141. [Epub ahead of print] PubMed PMID: 29957110.

17: Rennert RC, Strickland BA, Ravina K, Bakhsheshian J, Fredrickson V, Carey J, Russin JJ. Intraoperative Assessment of Cortical Perfusion After Intracranial-To-Intracranial and Extracranial-To-Intracranial Bypass for Complex Cerebral Aneurysms Using Flow 800. Oper Neurosurg (Hagerstown). 2019 May 1;16(5):583-592. doi: 10.1093/ons/opy154. PubMed PMID: 29897545.

18: Acar E, Ozdemir Z, Selcuk HH, Coban E, Soysal A. A rare aetiology of stroke; myxomatous aneurysm caused by atrial myxoma. Ideggyogy Sz. 2018 Mar 30;71(3-04):141-144. doi: 10.18071/isz.71.0141. PubMed PMID: 29889473.

19: Chen R, Zhang S, Guo R, Ma L, You C. Pediatric intracranial distal arterial aneurysms: report of 35 cases. Acta Neurochir (Wien). 2018 Aug;160(8):1633-1642. doi: 10.1007/s00701-018-3574-0. Epub

2018 Jun 2. PubMed PMID: 29860558.

20: Watanabe M, Abe E, Ishimoto R, Fujita N, Hasegawa H, Ueno H, Nakao Y, Yamamoto T, Wada R. [Dissecting Aneurysm of the Distal Middle Cerebral Artery Formed the Out Pouch during Long-term Follow-up:A Case Report]. No Shinkei Geka. 2018 May;46(5):415-422. doi: 10.11477/mf.1436203743. Japanese. PubMed PMID: 29794318.

21: Saad H, Krisht KM, Yang WH, Aboud E, Krisht AF. Rapid M1 Hemoclips Arteriotomy Repair After Emergency Coil Embolectomy. Oper Neurosurg (Hagerstown). 2018 Jul 1;15(1):25-31. doi: 10.1093/ons/opx187. PubMed PMID: 29529323.

22: Ren Y, Zhao S, Liu L, Sun H, Liu Y, Li H, Ma L, He M, You C, Li J. Successful microsurgical treatment of intracranial aneurysms in infants: a retrospective study and literature review. Acta Neurochir (Wien). 2018 Apr;160(4):783-792. doi: 10.1007/s00701-017-3457-9. Epub 2018 Jan 6. Review. PubMed PMID: 29307023.

23: Brzegowy P, Polak J, Wnuk J, Łasocha B, Walocha J, Popiela TJ. Middle cerebral artery anatomical variations and aneurysms: a retrospective study based on computed tomography angiography findings. Folia Morphol (Warsz). 2018;77(3):434-440. doi: 10.5603/FM.a2017.0112. Epub 2017 Dec 13. PubMed PMID: 29235088.

24: Yu LH, Shang-Guan HC, Chen GR, Zheng SF, Lin YX, Lin ZY, Yao PS, Kang DZ. Monolateral Pterional Keyhole Approaches to Bilateral Cerebral Aneurysms: Anatomy and Clinical Application. World Neurosurg. 2017 Dec;108:572-580. doi: 10.1016/j.wneu.2017.09.048. Epub 2017 Sep 18. PubMed PMID: 28927909.

25: Trungu S, Bruzzaniti P, Forcato S, Cimatti M, Raco A. Completely Thrombosed Distal Middle Cerebral Artery Aneurysm Mimicking a Cavernous Angioma: Case Report and Review of the Literature. World Neurosurg. 2017 Jul;103:955.e1-955.e4. doi: 10.1016/j.wneu.2017.04.172. Epub 2017 May 9. Review. PubMed PMID: 28499904.

26: Stambolija V, Mrak G, Lozic M, Ljevak J, Miklic Bublic M, Scap M. Intraoperative Eptifibatide Administration During Urgent Arterial Bypass in Neurosurgery. World Neurosurg. 2017 Jul;103:952.e5-952.e9. doi: 10.1016/j.wneu.2017.04.083. Epub 2017 Apr 21. PubMed PMID: 28435115.

27: Yao PS, Lin ZY, Zheng SF, Lin YX, Yu LH, Jiang CZ, Kang DZ. Coexistence of intracranial epidermoid tumor and multiple cerebral aneurysms: A case report and literature review. Medicine (Baltimore). 2017 Feb;96(5):e6012. doi: 10.1097/MD.0000000000006012. Review. PubMed PMID: 28151901; PubMed Central PMCID: PMC5293464.

28: Guzhin VE, Dubovoy AV, Cherepanov AV. [Surgical treatment of distal extracranial internal carotid artery aneurysms associated with pathological artery kinking]. Zh Vopr Neirokhir Im N N Burdenko. 2016;80(5):62-66. doi: 10.17116/neiro201680562-66. Russian. PubMed PMID: 27801400.

29: Moon TH, Kim SH, Lee JW, Huh SK. Clinical Analysis of Traumatic Cerebral Pseudoaneurysms. Korean J Neurotrauma. 2015 Oct;11(2):124-30. doi: 10.13004/kjnt.2015.11.2.124. Epub 2015 Oct 31. PubMed PMID: 27169077; PubMed Central PMCID: PMC4847513.

30: Mrak G, Duric KS, Nemir J. Middle cerebral artery fusiform aneurysm presented with stroke and delayed subarachnoid hemorrhage trapping, thrombectomy, and bypass. Surg Neurol Int. 2016 Apr 1;7(Suppl 9):S209-13. doi: 10.4103/2152-7806.179571. eCollection 2016. PubMed PMID: 27127709; PubMed Central PMCID: PMC4828945.

31: Topcuoglu OM, Akgul E, Daglioglu E, Topcuoglu ED, Peker A, Akmangit I, Belen D, Arat A. Flow Diversion in Middle Cerebral Artery Aneurysms: Is It Really an All-Purpose Treatment? World Neurosurg. 2016 Mar;87:317-27. doi: 10.1016/j.wneu.2015.11.073. Epub 2015 Dec 23. PubMed PMID: 26723288.

32: Huang L, Cao W, Ge L, Lu G, Wan J, Zhang L, Gu W, Zhang X, Geng D. Endovascular management of giant middle cerebral artery aneurysms. Int J Clin Exp Med. 2015 May 15;8(5):7517-25. eCollection 2015. PubMed PMID: 26221295; PubMed Central PMCID: PMC4509240.

33: Endo H, Niizuma K, Fujimura M, Sato K, Inoue T, Osawa S, Tominaga T. Ruptured Cerebral Microaneurysm Diagnosed by 3-Dimensional Fast Spin-Echo T1 Imaging with Variable Flip Angles. J Stroke Cerebrovasc Dis. 2015 Aug;24(8):e231-5. doi: 10.1016/j.jstrokecerebrovasdis.2015.04.031. Epub 2015 May 23. PubMed PMID: 26009499.

34: Kon H, Umezawa K, Saito A, Sasaki T, Nishijima M. [An operated case of a giant fusiform aneurysm of the middle cerebral artery with alternating radiological findings within a short period]. No Shinkei Geka. 2014 Sep;42(9):851-8. Japanese. PubMed PMID: 25179199.

35: Yang K, Ahn JS, Park JC, Kwon DH, Kwun BD, Kim CJ. The efficacy of bypass surgery using a short interposition graft for the treatment of intracranial complex aneurysm. World Neurosurg. 2015 Feb;83(2):197-202. doi: 10.1016/j.wneu.2014.06.008. Epub 2014 Jun 13. PubMed PMID: 24933242.

36: Murai Y, Mizunari T, Koketsu K, Tateyama K, Kobayashi S, Umeoka K, Teramoto A, Morita A. Target-controlled infusion technique with indocyanine green videoangiography for radial artery graft. Clin Neurol Neurosurg. 2014 Apr;119:70-4. doi: 10.1016/j.clineuro.2014.01.015. Epub 2014 Jan 31. PubMed PMID: 24635929.

37: Heit JJ, Choudhri O, Marks MP, Dodd RL, Do HM. Cerebral angioplasty using the Scepter XC dual lumen balloon for the treatment of vasospasm following intracranial aneurysm rupture. J Neurointerv Surg. 2015 Jan;7(1):56-61. doi: 10.1136/neurintsurg-2013-011043. Epub 2014 Jan 2. PubMed PMID: 24385556.

38: Kivipelto L, Niemelä M, Meling T, Lehecka M, Lehto H, Hernesniemi J. Bypass surgery for complex middle cerebral artery aneurysms: impact of the exact location in the MCA tree. J Neurosurg. 2014 Feb;120(2):398-408. doi: 10.3171/2013.10.JNS13738. Epub 2013 Nov 29. PubMed PMID: 24286147.

39: Ishishita Y, Tanikawa R, Noda K, Kubota H, Izumi N, Katsuno M, Ota N, Miyazaki T, Hashimoto M, Kimura T, Morita A. Universal extracranial-intracranial graft bypass for large or giant internal carotid aneurysms: techniques and results in 38 consecutive patients. World Neurosurg. 2014 Jul-Aug;82(1-2):130-9. doi: 10.1016/j.wneu.2013.02.063. Epub 2013 Feb 20. PubMed PMID: 23454690.

40: Krylov VV, Nakhabin OIu, Polunina NA, Luk'ianchikov VA, Kuksova NS, Grigor'eva EV, Khamidova LT. [High-flow extracranial-intracranial (EC-IC) bypass surgery in a patient with giant right cavernous ica aneurysm]. Zh Vopr Neirokhir Im N N Burdenko. 2012;76(5):40-6; discussion 47. Russian. PubMed PMID: 23230693.

41: Kalani MY, Zabramski JM, Hu YC, Spetzler RF. Extracranial-intracranial bypass and vessel occlusion for the treatment of unclippable giant middle cerebral artery aneurysms. Neurosurgery. 2013 Mar;72(3):428-35; discussion 435-6. doi: 10.1227/NEU.0b013e3182804381. PubMed PMID: 23208054.

42: Rodríguez-Hernández A, Zador Z, Rodríguez-Mena R, Lawton MT. Distal aneurysms of intracranial

arteries: application of numerical nomenclature, predilection for cerebellar arteries, and results of surgical management. World Neurosurg. 2013 Jul-Aug;80(1-2):103-12. doi: 10.1016/j.wneu.2012.09.010. Epub 2012 Sep 24. PubMed PMID: 23017587.

43: Hasan D, Chalouhi N, Jabbour P, Hashimoto T. Macrophage imbalance (M1 vs. M2) and upregulation of mast cells in wall of ruptured human cerebral aneurysms: preliminary results. J Neuroinflammation. 2012 Sep 21;9:222. doi: 10.1186/1742-2094-9-222. PubMed PMID: 22999528; PubMed Central PMCID: PMC3488554.

44: Chuang MJ, Lu CH, Cheng MH. Management of middle cerebral artery dissecting aneurysm. Asian J Surg. 2012 Jan;35(1):42-8. doi: 10.1016/j.asjsur.2012.04.007. Epub 2012 May 27. Review. PubMed PMID: 22726563.

45: Bain MD, Moskowitz SI, Rasmussen PA, Hui FK. Targeted extracranial-intracranial bypass with intra-aneurysmal administration of indocyanine green: case report. Neurosurgery. 2010 Dec;67(2 Suppl Operative):527-31. doi: 10.1227/NEU.0b013e3181f8889e. PubMed PMID: 21099583.

46: Takemura Y, Hirata Y, Sakata N, Nabeshima K, Takeshita M, Inoue T. Histopathologic characteristics of a saccular aneurysm arising in the non-branching segment of the distal middle cerebral artery. Pathol Res Pract. 2010 Jun 15;206(6):391-6. doi: 10.1016/j.prp.2009.10.002. Epub 2009 Dec 3. PubMed PMID: 19962251.

47: Seo BR, Kim TS, Joo SP, Lee JM, Jang JW, Lee JK, Kim JH, Kim SH. Surgical strategies using cerebral revascularization in complex middle cerebral artery aneurysms. Clin Neurol Neurosurg. 2009 Oct;111(8):670-5. doi: 10.1016/j.clineuro.2009.06.002. PubMed PMID: 19595503.

48: Peker A, Ustüner E, Ozkavukcu E, Sancak T. Performance analysis of 8-channel MDCT angiography in detection, localization, and sizing of intracranial aneurysms identified on DSA. Diagn Interv Radiol. 2009 Jun;15(2):81-5. PubMed PMID: 19517376.

49: Hsieh CT, Wu CC, Chiang YH, Chang CF. Stereotactic aspiration of enlarged intracerebral hematoma caused by intraprocedural perforation of aneurysm during coil embolization. Surg Neurol. 2008 Jun;69(6):633-5; discussion 635-6. doi: 10.1016/j.surneu.2007.03.045. PubMed PMID: 18486706.

50: Joo SP, Kim TS, Choi JW, Lee JK, Kim YS, Moon KS, Kim JH, Kim SH. Characteristics and management of ruptured distal middle cerebral artery aneurysms. Acta Neurochir (Wien). 2007;149(7):661-7. Epub 2007 May 31. PubMed PMID: 17541490.

51: Ferroli P, Biglioli F, Ciceri E, Addis A, Broggi G. Self-closing U-clips for intracranial microanastomoses in high-flow arterial bypass: technical case report. Neurosurgery. 2007 Feb;60(2 Suppl 1):ONSE170; discussion ONSE170. PubMed PMID: 17297352.

52: Yi HJ, Kim KM, Ko Y, Kim YS, Oh SJ, Oh SH. A spontaneous giant pseudoaneurysm presenting with chronic headache in adolescent. Childs Nerv Syst. 2006 Mar;22(3):295-9. Epub 2005 Jun 14. PubMed PMID: 16496160.

53: Fagundes-Pereyra WJ, Hoffman WE, Misra M, Charbel FT. Clip readjustment in aneurysm surgery after flow evaluation using the ultrasonic perivascular probe: case report. Arq Neuropsiquiatr. 2005 Jun;63(2A):339-44. PubMed PMID: 16100988.

54: Mao Y, Zhou LF, Song DL, Leng B, Gu YX, Zhu W. [Cerebral revascularization in treatment of intractable aneurysms]. Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 2005 Feb;27(1):26-30. Chinese. PubMed PMID: 15782488.

55: Mariak Z, Kochanowicz J, Kordecki K, Jadeszko M, Łysoń T, Lewko J. [Surgical evacuation of an embolization coil from the middle cerebral artery]. Neurol Neurochir Pol. 2004 Nov-Dec;38(6):533-7. Polish. PubMed PMID: 15654681.

56: Martellotta N, Gigante N, Toscano S, Maddalena GF, Tripodi M, Settembrini G, Stroscio C, Distefano G, Citro E. Unilateral supraorbital keyhole approach in patients with middle cerebral artery (M1-M2 segment) symmetrical aneurysms. Minim Invasive Neurosurg. 2003 Aug;46(4):228-30. PubMed PMID: 14506567.

57: Steiger HJ, Ito S, Schmid-Elsässer R, Uhl E. M2/M2 side-to-side rescue anastomosis for accidental M2 trunk occlusion during middle cerebral artery aneurysm clipping: technical note. Neurosurgery. 2001 Sep;49(3):743-7; discussion 747-8. PubMed PMID: 11523689.

58: Okada Y, Shima T, Nishida M, Yamane K, Hatayama T, Yamanaka C, Yoshida A. Comparison of transcranial Doppler investigation of aneurysmal vasospasm with digital subtraction angiographic and clinical findings. Neurosurgery. 1999 Sep;45(3):443-9; discussion 449-50. PubMed PMID: 10493365.

59: Abiko S, Okamura T, Kurokawa Y, Ikeda N, Ideguchi M, Watanabe K. [Diagnosis and treatment of nontraumatic dissecting aneurysm in the middle cerebral artery]. No Shinkei Geka. 1999 Aug;27(8):743-9. Review. Japanese. PubMed PMID: 10457939.

60: Bendok BR, Murad A, Getch CC, Batjer HH. Failure of a saphenous vein extracranial-intracranial bypass graft to protect against bilateral middle cerebral artery ischemia after carotid artery occlusion: case report. Neurosurgery. 1999 Aug;45(2):367-70; discussion 370-1. PubMed PMID: 10449082.

61: Nagasawa S, Ohta T, Tsuda E. Magnetic resonance angiographic source images for depicting topography and surgical planning for middle cerebral artery aneurysms: technique application. Surg Neurol. 1998 Jul;50(1):62-4. PubMed PMID: 9657494.

62: Komeichi T, Igarashi K, Takigami M, Saito K, Isu T, Itamoto K, Saito T, Imaizumi T. [A case of metastatic choriocarcinoma associated with cerebral thrombosis and aneurysmal formation]. No Shinkei Geka. 1996 May;24(5):463-7. Japanese. PubMed PMID: 8692374.

63: Aydin IH, Takçi E, Kadioğlu HH, Kayaoğlu CR, Tüzün Y. The variations of lenticulostriate arteries in the middle cerebral artery aneurysms. Acta Neurochir (Wien). 1996;138(5):555-9. PubMed PMID: 8800331.

64: Giller CA, Bowman G, Dyer H, Mootz L, Krippner W. Cerebral arterial diameters during changes in blood pressure and carbon dioxide during craniotomy. Neurosurgery. 1993 May;32(5):737-41; discussion 741-2. PubMed PMID: 8492848.

65: Vincentelli F, Caruso G, Andriamamonjy C, Rabehanta P, Graziani N, Grisoli F, Gouaze A, Vigouroux RP. [Micro-anatomy of collateral perforating branches of the middle cerebral artery]. Neurochirurgie. 1990;36(1):3-14; discussion 14-5. French. PubMed PMID: 2352590.

66: Rosner SS, Rhoton AL Jr, Ono M, Barry M. Microsurgical anatomy of the anterior perforating arteries. J Neurosurg. 1984 Sep;61(3):468-85. PubMed PMID: 6747683.

1)

Choi JY, Choi CH, Ko JK, Lee JI, Huh CW, Lee TH. Feasibility and efficacy of coil embolization for middle cerebral artery aneurysms. Yeungnam Univ J Med. 2019 Sep;36(3):208-218. doi: 10.12701/yujm.2019.00192. Epub 2019 Apr 25. PubMed PMID: 31620635; PubMed Central PMCID:

PMC6784653.
2)
Martínez-Galdámez M, Biondi A, Kalousek V, Pereira VM, Ianucci G, Gentric JC, Mosimann PJ, Brisbois D, Schob S, Quäschling U, Kaesmacher J, Ognard J, Escartín J, Tsang COA, Čulo B, Chabert E, Turjman F, Barbier C, Mihalea C, Spelle L, Chapot R. Periprocedural safety and technical outcomes of the new Silk Vista Baby flow diverter for the treatment of intracranial aneurysms: results from a multicenter experience. J Neurointerv Surg. 2019 Jul;11(7):723-727. doi: 10.1136/neurintsurg-2019-014770. Epub 2019 Mar 9. PubMed PMID: 30852525.
3)
Shimizu S, Mochizuki T, Kuroda H, Oka H, Kumabe T. [False Aneurysm Formation at the Origin of the M2 Segment of the Middle Cerebral Artery Following a Blunt Head Trauma:A Case Report]. No Shinkei Geka. 2019 Nov;47(11):1185-1191. doi: 10.11477/mf.1436204097. Japanese. PubMed PMID: 31761781.
4)
Vieira E, Faquini IV, Silva JL, Griz MFL, Cezar AB, Almeida NS, Azevedo-Filho HRC. Subarachnoid neurocysticercosis and an intracranial infectious aneurysm: case report. Neurosurg Focus. 2019 Aug 1;47(2):E16. doi: 10.3171/2019.5.FOCUS19280. PubMed PMID: 31370019.