

Traumatismo de la arteria vertebral

El traumatismo de la **arteria vertebral** es una entidad relativamente infrecuente si se compara con el trauma vascular que afecta a los otros vasos del cuello. Esto, debido a su localización profunda en el cuello y al mismo tiempo que está protegida por estructuras musculares y óseas en gran parte de su trayecto, y por otro lado, muchas de estas lesiones pueden pasar desapercibidas en su fase aguda.

Si analizamos los tipos de lesión que presenta la arteria vertebral tales como la oclusión, sección parcial, sección total, estenosis, fístula AV traumática y aneurisma, sólo la sección total es capaz de dar una hemorragia profusa que precise un tratamiento quirúrgico de urgencia.

El resto suele pasar desapercibido y sólo se diagnostica mediante un estudio angiográfico.

Son susceptibles de embolizar, ya que, a diferencia del territorio carotídeo, las secuelas neurológicas de tipo isquémico son escasas pues este territorio tiene una rica red colateral.

Desde el punto de vista quirúrgico de la urgencia el tratamiento universalmente aceptado es la ligadura de la arteria vertebral, especialmente si se trata de una lesión de la porción intraósea.

No es efectivo si la lesión es muy distal, ya que el cabo distal continuará sangrando.

El segundo, la compresión con gasas y hemostáticos locales no es efectiva, especialmente si se trata de una lesión intraósea.

Se describe un tercer recurso que es el uso de cera para hueso con lo que se logra un control parcial de la lesión y dar tiempo a embolizar uno de los cabos vía endovascular.

Y un cuarto recurso es lisa y llanamente abordar la lesión en forma directa, que en el caso de la porción ósea requiere efectuar una ventana extrayendo pequeños fragmentos de hueso y ligar ambos cabos sangrantes.

Respecto a las complicaciones o secuelas de esta lesión son frecuentes, especialmente de tipo neurológico en lo referente a compromiso de raíces cervicales y a la cadena del simpático cervical, estructuras muy próximas a este vaso, complicaciones

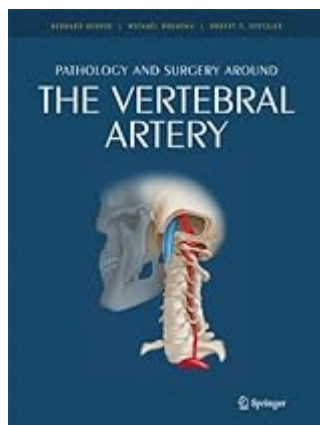
Respecto a la mortalidad, se da en los pacientes que llegan en paro cardiorrespiratorio secundario a la hemorragia o en pacientes con lesiones asociadas del tipo trauma cráneo encefálico o lesiones medulares altas.

Bibliografía

Ball, Bret Gene, Bruce R Krueger, and David G Piepgras. 2011. "Anomalous vertebral artery compression of the spinal cord at the cervicomedullary junction." *Surgical Neurology International* 2 (July 28). doi:10.4103/2152-7806.83232.

Shah, Abhidha, Amit Mahore, and Atul Goel. 2012. "Bilateral vasculopexy of anomalous vertebral arteries causing cervicomedullary compression: case report and technical note." *European Spine Journal: Official Publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society* (January 12). doi:10.1007/s00586-011-2136-4. <http://www.ncbi.nlm.nih.gov/pubmed/22237850>.

Libros recomendados



Bibliografía recomendada gratuita

- 1: Hajj-Chahine J, Tomasi J, Houmaida H, Bonnin E. eComment. The origin of the right vertebral artery? Interact Cardiovasc Thorac Surg. 2012 Jan;14(1):124. PubMed PMID: 22232382.
- 2: Katsuno M, Kobayashi S. Diagnosis of vertebral artery dissection with basiparallel anatomical scanning magnetic resonance imaging. J Nihon Med Sch. 2011;78(6):367-73. PubMed PMID: 22197869.
- 3: Ball BG, Krueger BR, Piepgras DG. Anomalous vertebral artery compression of the spinal cord at the cervicomedullary junction. Surg Neurol Int. 2011;2:103. Epub 2011 Jul 28. PubMed PMID: 21886876; PubMed Central PMCID: PMC3157089.
- 4: Yoshihara H, Vanderheiden TF, Harasaki Y, Beauchamp KM, Stahel PF. Fatal outcome after brain stem infarction related to bilateral vertebral artery occlusion - case report of a detrimental complication of cervical spine trauma. Patient Saf Surg. 2011 Jul 14;5:18. PubMed PMID: 21756312; PubMed Central PMCID: PMC3161841.
- 5: Kojuri J, Ostovan MA, Maleki F, Pourjafar M, Varavipour B, Borhani Haghighi A. Percutaneous transluminal angioplasty and stenting of the vertebral artery ostium with balloon-mounted bare coronary stents. Neurol India. 2011 May-Jun;59(3):397-400. PubMed PMID: 21743169.
- 6: Chou FH, Tung CS, Lin PJ, Chang CS, Hsu SP. Spontaneous dissection of the vertebral artery: report of three cases. Acta Neurol Taiwan. 2011 Jun;20(2):149-54. PubMed PMID: 21739395.
- 7: Abe T, Hagihara N, Hirohata M, Uchiyama Y, Tanaka N, Hayabuchi N. Partially thrombosed vertebral artery aneurysm with wall enhancement treated by stent-assisted coil embolization. Neurol Med Chir (Tokyo). 2011;51(6):431-3. PubMed PMID: 21701107.
- 8: Omeish AF, Ghanma IM, Alamlili RI. Successful stenting of total left subclavian artery occlusion post-coronary artery bypass graft surgery using dual left vertebral artery and left internal mammary artery protection. J Invasive Cardiol. 2011 Jun;23(6):E132-6. PubMed PMID: 21646657.
- 9: Teasdale E, Zampakis P, Santosh C, Razvi S. Multidetector computed tomography angiography: Application in vertebral artery dissection. Ann Indian Acad Neurol. 2011 Jan;14(1):35-41. PubMed PMID: 21633613; PubMed Central PMCID: PMC3098522.
- 10: Momiy J, Vasquez J. Iatrogenic vertebral artery pseudoaneurysm due to central venous catheterization. Proc (Bayl Univ Med Cent). 2011 Apr;24(2):96-100. PubMed PMID: 21566753; PubMed

Central PMCID: PMC3069514.

- 11: Cheong JH, Kim JM, Yang MS, Kim CH. Resolution of isolated unilateral hypoglossal nerve palsy following microvascular decompression of the intracranial vertebral artery. *J Korean Neurosurg Soc.* 2011 Mar;49(3):167-70. Epub 2011 Mar 31. PubMed PMID: 21556237; PubMed Central PMCID: PMC3085813.
- 12: Jang JW, Lee JK, Hur H, Seo BR, Lee JH, Kim SH. Vertebral artery injury after cervical spine trauma: A prospective study using computed tomographic angiography. *Surg Neurol Int.* 2011 Mar 23;2:39. PubMed PMID: 21541205; PubMed Central PMCID: PMC3086173.
- 13: Wang CM, Tsai WL, Lo YL, Chen JY, Wong AM. Unilateral right occipital condyle to C2 level spinal cord infarction associated with ipsilateral vertebral artery stenosis and contralateral vertebral artery dissection: a case report. *J Spinal Cord Med.* 2011;34(1):118-21. PubMed PMID: 21528635; PubMed Central PMCID: PMC3066486.
- 14: Ozkan Arat Y, Volpi J, Arat A, Klucznik R, Diaz O. Bilateral internal carotid artery and vertebral artery dissections with retinal artery occlusion after a roller coaster ride - case report and a review. *Ulus Travma Acil Cerrahi Derg.* 2011 Jan;17(1):75-8. PubMed PMID: 21341139.
- 15: Tekiner A, Gokcek C, Bayar MA, Erdem Y, Kilic C. Spontaneous resolution of a traumatic vertebral artery pseudoaneurysm. *Turk Neurosurg.* 2011 Jan;21(1):90-3. PubMed PMID: 21294098.
- 16: Kim HS, Lee JH, Cheh G, Lee SH. Cervical radiculopathy caused by vertebral artery loop formation : a case report and review of the literature. *J Korean Neurosurg Soc.* 2010 Nov;48(5):465-8. Epub 2010 Nov 30. PubMed PMID: 21286489; PubMed Central PMCID: PMC3030092.
- 17: Yen JC, Chan L, Lai YJ. Vertebral artery dissection presented as lateral medullary syndrome in a patient with migraine: a case report. *Acta Neurol Taiwan.* 2010 Dec;19(4):275-80. PubMed PMID: 21210329.
- 18: Gui L, Shi GS, Li GJ, Fan WH, Huang HQ, Zhou ZH, Chen KN. Spontaneous vertebral artery dissection: report of 16 cases. *Neurol India.* 2010 Nov-Dec;58(6):869-74. PubMed PMID: 21150051.
- 19: Sharma AM, Herrera B, Aronow HD. Simultaneous spontaneous coronary and vertebral artery dissection in a postpartum woman. *J Invasive Cardiol.* 2010 Dec;22(12):E229-32. PubMed PMID: 21127377.
- 20: Yamagata T, Mitsuhashi Y, Nishio A, Kawakami T, Yoshimura M, Urano Y, Yamagata K, Ohata K. Protection of anastomotic pathways to the vertebral artery during stenting of external carotid artery stenosis. *Neurol Med Chir (Tokyo).* 2010;50(11):1001-5. PubMed PMID: 21123986.
- 21: Park YS, Kang DH, Park KB, Hwang SH. Posterior atlantoaxial screw-rod fixation in a case of aberrant vertebral artery course combined with bilateral high-riding vertebral artery. *J Korean Neurosurg Soc.* 2010 Oct;48(4):367-70. Epub 2010 Oct 30. PubMed PMID: 21113368; PubMed Central PMCID: PMC2982919.
- 22: Nam KH, Sung JK, Park J, Cho DC. End-to-End Anastomosis of an Unanticipated Vertebral Artery Injury during C2 Pedicle Screwing. *J Korean Neurosurg Soc.* 2010 Oct;48(4):363-6. Epub 2010 Oct 30. PubMed PMID: 21113367; PubMed Central PMCID: PMC2982918.
- 23: Araki S, Oda K, Fujita T, Kawakami M. Internal trapping of a ruptured vertebral artery dissecting aneurysm followed by recanalization of the trapped vertebral artery without aneurysm recurrence:

case report. *Neurol Med Chir (Tokyo)*. 2010;50(10):914-7. PubMed PMID: 21030804.

24: Kojima A, Okui S, Onozuka S. Long-term follow up of antegrade recanalization of vertebral artery dissecting aneurysm after internal trapping: case report. *Neurol Med Chir (Tokyo)*. 2010;50(10):910-3. PubMed PMID: 21030803.

25: Yamashiro S, Kuniyoshi Y, Arakaki K, Inafuku H, Morishima Y, Kise Y. Total arch replacement with associated anomaly of the left vertebral artery. *Ann Thorac Cardiovasc Surg*. 2010 Jun;16(3):216-9. PubMed PMID: 20930688.

26: Rodríguez-Fernández C, León González M, García-Peñas JJ, López Pino MA. [Vertebral artery dissection following a minor household accident in a 21-month-old child]. *An Pediatr (Barc)*. 2010 Dec;73(6):371-3. Epub 2010 Sep 28. Spanish. PubMed PMID: 20880765.

27: Testai FD, Gorelick PB. An unusual cause of vertebral artery dissection: esophagogastroduodenoscopy. *Stroke Res Treat*. 2010 Aug 8;2010. pii: 915484. PubMed PMID: 20847949; PubMed Central PMCID: PMC2934772.

28: Li Y, Horiuchi T, Nakagawa F, Hongo K. Vertebral artery dissecting aneurysm treated by proximal occlusion and posterior inferior cerebellar artery reconstruction with fenestrated clips. Case report. *Neurol Med Chir (Tokyo)*. 2010;50(8):655-8. PubMed PMID: 20805648.

29: Verin AL, Creuze N, Musset D. Multidetector CT scan findings of a right aberrant retroesophageal vertebral artery with an anomalous origin from a cervical aortic arch. *Chest*. 2010 Aug;138(2):418-22. PubMed PMID: 20682530.

30: Shobha N, Bhatia R, Barber PA. Dental procedures and stroke: a case of vertebral artery dissection. *J Can Dent Assoc*. 2010;76:a82. Review. PubMed PMID: 20633337.

31: Naggara O, Louillet F, Touzé E, Roy D, Leclerc X, Mas JL, Pruvo JP, Meder JF, Oppenheim C. Added value of high-resolution MR imaging in the diagnosis of vertebral artery dissection. *AJNR Am J Neuroradiol*. 2010 Oct;31(9):1707-12. Epub 2010 Jul 1. PubMed PMID: 20595374.

32: Lou E, Züchner S, Vance J, Morgenlander J. A potential novel variant of hereditary sensory neuropathy in a 61-year-old man with cough-induced syncope and vertebral artery dissection. *Mayo Clin Proc*. 2010 Jun;85(6):594-5. PubMed PMID: 20511489; PubMed Central PMCID: PMC2878264.

33: Matti AI, Lee AW, Chen CS. Traumatic vertebral artery dissection presenting with incomplete congruous homonymous quadrantanopia. *BMC Ophthalmol*. 2010 May 19;10:14. PubMed PMID: 20482837; PubMed Central PMCID: PMC2885997.

34: Kato M, Tanaka Y, Kuroda T, Nakashima T, Hattori T. Vertebral artery dissecting aneurysm with Cushing's syndrome: case report. *Neurol Med Chir (Tokyo)*. 2010;50(4):313-5. PubMed PMID: 20448424.

35: Taha MM, Sakaida H, Asakura F, Maeda M, Toma N, Yamamoto A, Kawaguchi K, Matsushima S, Taki W. Endovascular management of vertebral artery dissecting aneurysms: review of 25 patients. *Turk Neurosurg*. 2010 Apr;20(2):126-35. doi: 10.5137/1019-5149.JTN.2790-09. PubMed PMID: 20401839.

36: Lv X, Jiang C, Li Y, Wu Z. Clinical outcomes of ruptured and unruptured vertebral artery-posterior

inferior cerebellar artery complex dissecting aneurysms after endovascular embolization. *AJNR Am J Neuroradiol*. 2010 Aug;31(7):1232-5. Epub 2010 Apr 15. PubMed PMID: 20395384.

37: Stavrinou LC, Stranjalis G, Stavrinou PC, Bontozoglou N, Sakas DE. Extracranial vertebral artery aneurysm presenting as a chronic cervical mass lesion. *Case Report Med*. 2010;2010:938219. Epub 2010 Apr 6. PubMed PMID: 20379376; PubMed Central PMCID: PMC2850509.

38: Ogilvy CS, Yang X, Natarajan SK, Hauck EF, Sun L, Lewis-Mason L, Hopkins LN, Siddiqui AH, Levy EI. Restenosis rates following vertebral artery origin stenting: does stent type make a difference? *J Invasive Cardiol*. 2010 Mar;22(3):119-24. Review. PubMed PMID: 20197579.

39: Chung SY, Lee DH, Choi JW, Choi BS, In HS, Kim SM, Choi CG, Kim SJ, Suh DC. Use of self-expanding stents for the treatment of vertebral artery ostial stenosis: a single center experience. *Korean J Radiol*. 2010 Mar-Apr;11(2):156-63. Epub 2010 Feb 22. PubMed PMID: 20191062; PubMed Central PMCID: PMC2827778.

40: Ito Y, Matsumaru Y, Suzuki K, Matsumura A. Impaired cognitive function due to cerebellar infarction and improvement after stent-assisted angioplasty for intracranial vertebral artery stenosis-case report. *Neurol Med Chir (Tokyo)*. 2010;50(2):135-8. PubMed PMID: 20185879.

41: Arnold M, Kurmann R, Galimanis A, Sarikaya H, Stapf C, Gralla J, Georgiadis D, Fischer U, Mattle HP, Bousser MG, Baumgartner RW. Differences in demographic characteristics and risk factors in patients with spontaneous vertebral artery dissections with and without ischemic events. *Stroke*. 2010 Apr;41(4):802-4. Epub 2010 Feb 25. PubMed PMID: 20185787.

42: Arauz A, Márquez JM, Artigas C, Balderrama J, Orrego H. Recanalization of vertebral artery dissection. *Stroke*. 2010 Apr;41(4):717-21. Epub 2010 Feb 11. PubMed PMID: 20150549.

43: Mitchell J. Vertebral Artery Blood flow Velocity Changes Associated with Cervical Spine rotation: A Meta-Analysis of the Evidence with implications for Professional Practice. *J Man Manip Ther*. 2009;17(1):46-57. PubMed PMID: 20046565; PubMed Central PMCID: PMC2704344.

44: Al Barbarawi M, Odat Z, Alheis M, Qudsieh S, Qudsieh T. Surgical resection of neoplastic cervical spine lesions in relation to the vertebral artery V2 segment. *Neurol Int*. 2010 Jun 21;2(1):e11. PubMed PMID: 21577335; PubMed Central PMCID: PMC3093210.

45: Alrubaiy L. Images in clinical medicine: vertebral artery dissection. *Libyan J Med*. 2010 Jan 11;5. doi: 10.4176/090706. PubMed PMID: 21483556; PubMed Central PMCID: PMC3066762.

46: Kim DW. Concomitant dual origin and fenestration of the left vertebral artery resembling dissection. *J Korean Neurosurg Soc*. 2009 Nov;46(5):498-500. Epub 2009 Nov 30. PubMed PMID: 20041064; PubMed Central PMCID: PMC2796360.

47: Sugiu K, Tokunaga K, Ono S, Nishida A, Date I. Rebleeding from a vertebral artery dissecting aneurysm after endovascular internal trapping: adverse effect of intrathecal urokinase injection or incomplete occlusion?-case report-. *Neurol Med Chir (Tokyo)*. 2009 Dec;49(12):597-600. PubMed PMID: 20035136.

48: Yi ZQ, Li L, Mo DP, Zhang JY, Zhang Y, Bao SD. Anomalous vertebral artery not passing through the transverse foramen of the atlas. *Chin Med J (Engl)*. 2009 Nov 5;122(21):2675-7. PubMed PMID: 19951593.

49: Miller S, Kottachchi D, Miller E. Vertebral artery dissection presenting as a Brown-Séquard

syndrome: a case report. *J Med Case Reports*. 2009 Nov 4;3:107. PubMed PMID: 19946585; PubMed Central PMCID: PMC2783048.

50: Ishihara H, Sakai N, Kuroiwa T, Kunieda T, Osaka N, Morizane A, Sakai C, Yano T, Kajikawa R, Kikuchi H. Endovascular trapping for vertebral artery fusiform aneurysm in a patient with idiopathic thrombocytopenic purpura. *Neurol Med Chir (Tokyo)*. 2009 Nov;49(11):514-7. PubMed PMID: 19940399.

51: Kendi AT, Brace JR. Vertebral artery duplication and aneurysms: 64-slice multidetector CT findings. *Br J Radiol*. 2009 Nov;82(983):e216-8. PubMed PMID: 19890113.

52: Kocaeli H, Chaalala C, Andaluz N, Zuccarello M. Spontaneous intradural vertebral artery dissection: a single-center experience and review of the literature. *Skull Base*. 2009 May;19(3):209-18. PubMed PMID: 19881901; PubMed Central PMCID: PMC2702199.

53: Katsuno M, Mizunari T, Kobayashi S, Takahashi H, Teramoto A. Rupture of a vertebral artery dissecting aneurysm developing immediately after trapping of a dissecting aneurysm on the contralateral vertebral artery: case report. *Neurol Med Chir (Tokyo)*. 2009 Oct;49(10):468-70. PubMed PMID: 19855144.

54: Dalgic A, Okay O, Nacar O, Daglioglu E, Pasaoglu L, Belen D. Vertebral artery insult at the transverse foramina by gun shot wounds: report of two cases. *Turk Neurosurg*. 2009 Oct;19(4):413-6. PubMed PMID: 19847764.

55: Hua Y, Meng XF, Jia LY, Ling C, Miao ZR, Ling F, Liu JB. Color Doppler imaging evaluation of proximal vertebral artery stenosis. *AJR Am J Roentgenol*. 2009 Nov;193(5):1434-8. PubMed PMID: 19843764.

56: Natsis K, Didagelos M, Noussios G, Adamopoulou A, Nikolaidou E, Paraskevas G. Combined anomalous origin of a left inferior thyroid artery and a left vertebral artery: a case report. *Cases J*. 2009 May 26;2:7400. PubMed PMID: 19829953; PubMed Central PMCID: PMC2740228.

57: Muralimohan S, Pande A, Vasudevan MC, Ramamurthi R. Suboccipital segment of the vertebral artery: a cadaveric study. *Neurol India*. 2009 Jul-Aug;57(4):447-52. PubMed PMID: 19770546.

58: Provenzale JM, Sarikaya B. Comparison of test performance characteristics of MRI, MR angiography, and CT angiography in the diagnosis of carotid and vertebral artery dissection: a review of the medical literature. *AJR Am J Roentgenol*. 2009 Oct;193(4):1167-74. Review. PubMed PMID: 19770343.

59: Khan S, Rich P, Clifton A, Markus HS. Noninvasive detection of vertebral artery stenosis: a comparison of contrast-enhanced MR angiography, CT angiography, and ultrasound. *Stroke*. 2009 Nov;40(11):3499-503. Epub 2009 Sep 17. PubMed PMID: 19762707.

60: Canyigit M, Akgoz A, Koksai A, Yucesoy C. Aberrant right vertebral artery: a rare aortic arch anomaly. *Br J Radiol*. 2009 Aug;82(981):789-91. PubMed PMID: 19729552.

61: Vajda Z, Miloslavski E, Güthe T, Fischer S, Albes G, Heuschmid A, Henkes H. Treatment of stenoses of vertebral artery origin using short drug-eluting coronary stents: improved follow-up results. *AJNR Am J Neuroradiol*. 2009 Oct;30(9):1653-6. Epub 2009 Sep 3. PubMed PMID: 19729536.

62: Bonati LH, Ederle J, McCabe DJ, Dobson J, Featherstone RL, Gaines PA, Beard JD, Venables GS, Markus HS, Clifton A, Sandercock P, Brown MM; CAVATAS Investigators. Long-term risk of carotid restenosis in patients randomly assigned to endovascular treatment or endarterectomy in the Carotid and Vertebral Artery Transluminal Angioplasty Study (CAVATAS): long-term follow-up of a randomised trial. *Lancet Neurol*. 2009 Oct;8(10):908-17. Epub 2009 Aug 28. PubMed PMID: 19717347; PubMed Central PMCID: PMC2755038.

63: Ederle J, Bonati LH, Dobson J, Featherstone RL, Gaines PA, Beard JD, Venables GS, Markus HS, Clifton A, Sandercock P, Brown MM; CAVATAS Investigators. Endovascular treatment with angioplasty or stenting versus endarterectomy in patients with carotid artery stenosis in the Carotid and Vertebral Artery Transluminal Angioplasty Study (CAVATAS): long-term follow-up of a randomised trial. *Lancet Neurol*. 2009 Oct;8(10):898-907. Epub 2009 Aug 28. PubMed PMID: 19717345; PubMed Central PMCID: PMC2755037.

64: Yamakawa H, Yoshimura S, Iwama T. Anterior spinal artery as a collateral channel in patients with acute bilateral vertebral artery occlusions. Two case reports. *Neurol Med Chir (Tokyo)*. 2009 Aug;49(8):354-8. PubMed PMID: 19707001.

65: Chuang YM, Chen CC, Lin CP. Vertebral artery hypoplasia may contribute to abnormal vestibular evoked myogenic potentials. *Acta Neurol Taiwan*. 2009 Jun;18(2):113-7. PubMed PMID: 19673363.

66: Kadota R, Yamazaki M, Endo T, Okawa A, Koda M. Image fusion for preoperative evaluation of vertebral artery in a patient with atlantoaxial vertical subluxation and chronic renal failure. *Eur Spine J*. 2010 Jul;19 Suppl 2:S96-9. Epub 2009 Jul 8. PubMed PMID: 19585158; PubMed Central PMCID: PMC2899627.

67: Duan SY, Lü SM, Ye F, Lin QC, Chen LB. Three-dimensional CT angiography study on the relations between the vertebral artery and atlantoaxial joint. *Chin Med J (Engl)*. 2009 Apr 20;122(8):917-20. PubMed PMID: 19493414.

68: Hong JM, Chung CS, Bang OY, Yong SW, Joo IS, Huh K. Vertebral artery dominance contributes to basilar artery curvature and peri-vertebrobasilar junctional infarcts. *J Neurol Neurosurg Psychiatry*. 2009 Oct;80(10):1087-92. Epub 2009 May 3. PubMed PMID: 19414436; PubMed Central PMCID: PMC2735647.

69: Compston A. The cervical portion of the vertebral artery: a clinico-pathological study, by E. C. Hutchinson and P. O. Yates (from the Department of Neurology and Neuro-pathology, the Manchester Royal Infirmary) *Brain* 1956: 79; 319-31 and Arterial occlusions in the vertebro-basilar system: a study of 44 patients with post-mortem data, by P. Castaigne, F. Lhermitte, J. C. Gautier, R. Escourolle, C. Derouesné, P. Der Agopian and C. Popa (from Hôpital de la Salpêtrière, 47 Bd de l'hôpital, Paris, 13), *Brain* 1973: 96; 133-154. *Brain*. 2009 Apr;132(Pt 4):827-30. PubMed PMID: 19382288.

70: Yu SC, Leung TW, Lam JS, Lam WW, Wong LK. Symptomatic ostial vertebral artery stenosis: treatment with drug-eluting stents-clinical and angiographic results at 1-year follow-up. *Radiology*. 2009 Apr;251(1):224-32. PubMed PMID: 19332854.

71: Ono SE, Kawasaki CS, Coelho LO, Lucaski FF, de Carvalho Neto A. Widening of intervertebral foramen by tortuous vertebral artery. *Arq Neuropsiquiatr*. 2009 Mar;67(1):115-6. PubMed PMID: 19330226.

72: Takeuchi S, Kawaguchi T, Nakatani M, Isu T. Hemorrhagic infarction originating from vertebral artery stenosis caused by an osteophyte at the C5 superior articular process. *Neurol Med Chir (Tokyo)*. 2009 Mar;49(3):114-6. PubMed PMID: 19318736.

73: Duan S, Lv S, Ye F, Lin Q. Imaging anatomy and variation of vertebral artery and bone structure at craniocervical junction. *Eur Spine J*. 2009 Aug;18(8):1102-8. Epub 2009 Mar 14. PubMed PMID: 19288143; PubMed Central PMCID: PMC2899500.

74: Machnowska M, Moien-Afshari F, Voll C, Wiebe S. Partial anterior cervical cord infarction following vertebral artery dissection. *Can J Neurol Sci*. 2008 Nov;35(5):674-7. PubMed PMID: 19235459.

75: Richard S, Rodier G, Lacour JC, Anxionnat R, Vespignani H, Ducrocq X. Two cases of vertebral artery dissections with late stroke recurrences. *J Neuroradiol*. 2009 Jun;36(3):175-7. Epub 2009 Feb 13. PubMed PMID: 19217663.

76: Lum C, Chakraborty S, Schlossmacher M, Santos M, Mohan R, Sinclair J, Sharma M. Vertebral artery dissection with a normal-appearing lumen at multisection CT angiography: the importance of identifying wall hematoma. *AJNR Am J Neuroradiol*. 2009 Apr;30(4):787-92. Epub 2009 Jan 22. PubMed PMID: 19164438.

77: Choi SK, Rhee BA, Park BJ, Lim YJ. Hemifacial spasm caused by fusiform aneurysm at vertebral artery-posterior inferior cerebellar artery junction. *J Korean Neurosurg Soc*. 2008 Dec;44(6):399-400. Epub 2008 Dec 31. PubMed PMID: 19137088; PubMed Central PMCID: PMC2615147.

78: Harnier S, Harzheim A, Limmroth V, Horz R, Kuhn J. Duplication of the common carotid artery and the ipsilateral vertebral artery with a fenestration of the contralateral common carotid artery. *Neurol India*. 2008 Oct-Dec;56(4):491-3. PubMed PMID: 19127056.

79: Boettinger M, Sebastian S, Gamulescu MA, Grauer O, Ritzka M, Schuierer G, Bogdahn U, Steinbrecher A, Schlachetzki F. Bilateral vertebral artery occlusion with retrograde basilar flow in three cases of giant cell arteritis. *BMJ Case Rep*. 2009;2009. pii: bcr07.2008.0488. Epub 2009 Feb 26. Erratum in: *BMJ Case Rep*. 2009;2009:bcr0720080488corr1. Boettinger, Markus Robert [corrected to Boettinger, Markus]; Sebastian, Schreglmann Robert [corrected to Sebastian, Schreglmann]; Gamulescu, Maria-Andreea Robert [corrected to Gamulescu, Maria-Andreea]; Schuierer, Gerhard Robert [corrected to Schuierer, Gerhard]; Bogdahn, Ulrich Robert [Bogdahn, Ulrich]. PubMed PMID: 21691390; PubMed Central PMCID: PMC3028572.

80: Roh JH, Koo YS, Jang SH, Park MH. Medulla compression caused by vertebral artery dolichoectasia. *BMJ Case Rep*. 2009;2009:bcr2007123885. Epub 2009 Feb 16. PubMed PMID: 21687294; PubMed Central PMCID: PMC3105908.

81: Rane N, McAuley D. Vertebral artery dissection presenting as isolated vertigo. *BMJ Case Rep*. 2009;2009. pii: bcr11.2008.1238. Epub 2009 May 10. PubMed PMID: 21686397; PubMed Central PMCID: PMC3027312.

82: Park KW, Park JS, Hwang SC, Im SB, Shin WH, Kim BT. Vertebral artery dissection: natural history, clinical features and therapeutic considerations. *J Korean Neurosurg Soc*. 2008 Sep;44(3):109-15. Epub 2008 Sep 20. PubMed PMID: 19096659; PubMed Central PMCID: PMC2588305.

83: Benchimol-Barbosac PR, Dantas Vilela F, Alves de Melo FB, Cordeiro da Rocha AS. A 53-year-old male with bilateral carotid occlusion and a functionally preserved cerebral circulation due to compensatory bilateral vertebral artery flow and reversed bilateral flow through the superior thyroid arteries. *Rev Esp Cardiol*. 2008 Dec;61(12):1357-8. English, Spanish. PubMed PMID: 19080979.

84: Bozgeyik Z, Berilgen S, Ozdemir H, Tekatas A, Ogur E. Evaluation of the effects of sildenafil citrate

(viagra) on vertebral artery blood flow in patients with vertebro-basilar insufficiency. *Korean J Radiol.* 2008 Nov-Dec;9(6):477-80. PubMed PMID: 19039262; PubMed Central PMCID: PMC2627245.

85: Terakawa Y, Yamamura A, Murayama N, Kimura H, Nakagawa T, Fujishige M, Nunomura K, Ogawa D, Hashi K. Internal trapping following proximal clipping for a ruptured partially thrombosed giant aneurysm of the vertebral artery-case report. *Neurol Med Chir (Tokyo).* 2008;48(11):515-8. PubMed PMID: 19029780.

86: Compter A, van der Worp HB, Schonewille WJ, Vos JA, Algra A, Lo TH, Mali WP, Moll FL, Kappelle LJ. VAST: Vertebral Artery Stenting Trial. Protocol for a randomised safety and feasibility trial. *Trials.* 2008 Nov 24;9:65. PubMed PMID: 19025615; PubMed Central PMCID: PMC2611963.

87: Sancak T, Bilgic S, Ustuner E. Endovascular stent-graft treatment of a traumatic vertebral artery pseudoaneurysm and vertebrojugular fistula. *Korean J Radiol.* 2008 Jul;9 Suppl:S68-72. PubMed PMID: 18607131; PubMed Central PMCID: PMC2627192.

88: Park JK, Kim SH, Kim BS, Choi G. Two cases of aberrant right subclavian artery and right vertebral artery that originated from the right common carotid artery. *Korean J Radiol.* 2008 Jul;9 Suppl:S39-42. Review. PubMed PMID: 18607124; PubMed Central PMCID: PMC2627186.

89: Jickling G, Leung K, Gan K, Shuaib A, Lewis J, Mouradian MS. Left vertebral artery dissection causing bilateral internuclear ophthalmoplegia. *CJEM.* 2008 Sep;10(5):485-7. PubMed PMID: 18826742.

90: Karcaaltincaba M, Haliloglu M, Ozkan E, Kocak M, Akinci D, Ariyurek M. Non-invasive imaging of aberrant right subclavian artery pathologies and aberrant right vertebral artery. *Br J Radiol.* 2009 Jan;82(973):73-8. Epub 2008 Sep 15. PubMed PMID: 18794191.

91: Tabatabai G, Schöber W, Ernemann U, Weller M, Krüger R. Vertebral artery dissection presenting with ipsilateral acute C5 and C6 sensorimotor radiculopathy: A case report. *Cases J.* 2008 Sep 3;1(1):139. PubMed PMID: 18768083; PubMed Central PMCID: PMC2538503.

92: Hsieh PF, Lee YC, Chang MH. Unilateral carotid and vertebral artery dissections and contralateral subarachnoid hemorrhage in a postpartum patient. *Acta Neurol Taiwan.* 2008 Jun;17(2):94-8. PubMed PMID: 18686648.

93: Redekop GJ. Extracranial carotid and vertebral artery dissection: a review. *Can J Neurol Sci.* 2008 May;35(2):146-52. Review. PubMed PMID: 18574926.

94: Son JS, Hong KB, Chung DC. Pseudocoarctation of the aorta associated with the anomalous origin of the left vertebral artery: a case report. *Korean J Radiol.* 2008 May-Jun;9(3):283-5. Review. PubMed PMID: 18525233; PubMed Central PMCID: PMC2627252.

95: Herrera DA, Vargas SA, Dublin AB. Endovascular treatment of traumatic injuries of the vertebral artery. *AJNR Am J Neuroradiol.* 2008 Sep;29(8):1585-9. Epub 2008 May 22. PubMed PMID: 18499790.

96: Umasankar U, Carroll TJ, Famuboni A, Patel MD, Starke ID. Vertebral artery dissection: not a rare cause of stroke in the young. *Age Ageing.* 2008 May;37(3):345-6. Epub 2008 Feb 27. PubMed PMID: 18308696.

97: Tsutsumi S, Ito M, Yasumoto Y. Simultaneous bilateral vertebral artery occlusion in the lower cervical spine manifesting as bow hunter's syndrome. *Neurol Med Chir (Tokyo).* 2008 Feb;48(2):90-4. PubMed PMID: 18296880.

- 98: Kirsch J, Williamson EE. Aberrant left internal mammary artery off an aberrant vertebral artery. *Eur Heart J*. 2008 Jul;29(14):1782. Epub 2008 Feb 22. PubMed PMID: 18296679.
- 99: Müller M, Bleeck J, Ruf M. Vertebral artery anomaly with entry at C4-avoiding a surgical pitfall: a case report. *Eur Spine J*. 2008 Sep;17 Suppl 2:S291-3. Epub 2008 Jan 8. PubMed PMID: 18180962; PubMed Central PMCID: PMC2525917.
- 100: Akins PT, Kerber CW, Pakbaz RS. Stenting of vertebral artery origin atherosclerosis in high-risk patients: bare or coated? A single-center consecutive case series. *J Invasive Cardiol*. 2008 Jan;20(1):14-20. PubMed PMID: 18174613.
- 101: Martín GG, Fernández SP, Castro VS, Cueto OH, Acebal MR. Vertebral artery occlusion after chemotherapy. *Stroke*. 2008 Feb;39(2):e38; author reply e39. Epub 2007 Dec 27. PubMed PMID: 18162617.
- 102: Hassan A, ul Haq T, Khimani F, Ali S, Dhakam S, Syed NA. Acute vertebrobasilar artery thrombosis: long-term benefit of vertebral artery stenting. *Singapore Med J*. 2007 Oct;48(10):e277-80. PubMed PMID: 17909666.
- 103: Rane NJ, McAuley D. Vertebral artery dissection presenting as isolated vertigo. *Emerg Med J*. 2007 Oct;24(10):732. PubMed PMID: 17901283; PubMed Central PMCID: PMC2658449.
- 104: Yokota H, Atsumi T, Araki T, Fuse A, Sato H, Kawai M, Yamamoto Y. Significance of magnetic resonance imaging in the diagnosis of vertebral artery injury associated with blunt cervical spine trauma. *J Nihon Med Sch*. 2007 Aug;74(4):293-9. PubMed PMID: 17878699.
- 105: Hagiwara N, Kamouchi M, Inoue T, Ibayashi S, Iida M, Okada Y. Dissection of bilateral intracranial vertebral artery with basilar artery involvement: a case report of a patient free from neurological deficits. *Intern Med*. 2007;46(17):1467-70. Epub 2007 Sep 3. PubMed PMID: 17827851.
- 106: Motsitsi SN, Steyn RR. Traumatic vertebral artery dissection in an adult with brachial plexus injury and cervical spinal fractures. *J Brachial Plex Peripher Nerve Inj*. 2007 Sep 6;2:17. PubMed PMID: 17822530; PubMed Central PMCID: PMC2063499.
- 107: Giannopoulos S, Markoula S, Kosmidou M, Pelidou SH, Kyritsis AP. Lateral medullary ischaemic events in young adults with hypoplastic vertebral artery. *J Neurol Neurosurg Psychiatry*. 2007 Sep;78(9):987-9. PubMed PMID: 17702781; PubMed Central PMCID: PMC2117884.
- 108: Picquet J, Benharash P, Blin V, Jousset Y, Papon X, Enon B. Surgery of the pretransversal vertebral artery: indications and results. *Int Angiol*. 2007 Sep;26(3):279-84. PubMed PMID: 17622212.
- 109: Lee JW, Jung JY, Kim YB, Huh SK, Kim DI, Lee KC. Spontaneous dissecting aneurysm of the intracranial vertebral artery: management strategies. *Yonsei Med J*. 2007 Jun 30;48(3):425-32. PubMed PMID: 17594150; PubMed Central PMCID: PMC2628103.
- 110: Siclari F, Burger IM, Fasel JH, Gailloud P. Developmental anatomy of the distal vertebral artery in relationship to variants of the posterior and lateral spinal arterial systems. *AJNR Am J Neuroradiol*. 2007 Jun-Jul;28(6):1185-90. PubMed PMID: 17569985.
- 111: Hieda M, Toyota N, Kakizawa H, Hirai N, Tachikake T, Yahiro Y, Iwasaki Y, Horiguchi J, Ito K. Endovascular therapy for massive haemothorax caused by ruptured extracranial vertebral artery

aneurysm with neurofibromatosis Type 1. *Br J Radiol.* 2007 Apr;80(952):e81-4. PubMed PMID: 17551167.

112: Biria M, Tadros P, Gupta K. Subclavian-vertebral artery bifurcation stenting using drug-eluting stents: a report of two cases using different techniques. *J Invasive Cardiol.* 2007 Jun;19(6):E156-9. PubMed PMID: 17541137.

113: Satti SR, Cerniglia CA, Koenigsberg RA. Cervical vertebral artery variations: an anatomic study. *AJNR Am J Neuroradiol.* 2007 May;28(5):976-80. PubMed PMID: 17494682.

114: Coward LJ, McCabe DJ, Ederle J, Featherstone RL, Clifton A, Brown MM; CAVATAS Investigators. Long-term outcome after angioplasty and stenting for symptomatic vertebral artery stenosis compared with medical treatment in the Carotid And Vertebral Artery Transluminal Angioplasty Study (CAVATAS): a randomized trial. *Stroke.* 2007 May;38(5):1526-30. Epub 2007 Mar 29. PubMed PMID: 17395869.

115: Khan S, Cloud GC, Kerry S, Markus HS. Imaging of vertebral artery stenosis: a systematic review. *J Neurol Neurosurg Psychiatry.* 2007 Nov;78(11):1218-25. Epub 2007 Feb 7. Review. PubMed PMID: 17287234; PubMed Central PMCID: PMC2117584.

116: Uda T, Murata K, Nakamura K, Ichinose T, Kusakabe T, Sakaguchi M. Proximal flow arrest with temporary subclavian steal for internal trapping of a ruptured vertebral artery dissecting aneurysm. *Neurol Med Chir (Tokyo).* 2007 Jan;47(1):18-21. PubMed PMID: 17245009.

117: Lee JS, Yong SW, Bang OY, Shin YS, Kim BM, Kim SY. Comparison of spontaneous intracranial vertebral artery dissection with large artery disease. *Arch Neurol.* 2006 Dec;63(12):1738-44. PubMed PMID: 17172613.

118: Arthur ME, Castresana MR, Paschal JW, Patel VS. Acute cerebellar stroke after inadvertent cannulation and pulmonary artery catheter placement in the right vertebral artery. *Anesth Analg.* 2006 Dec;103(6):1625-6. PubMed PMID: 17122296.

119: da Costa LB, Tymianski M. Symptomatic non-atherosclerotic bilateral extracranial vertebral artery occlusion treated with extracranial to intracranial bypass: case report. *Arq Neuropsiquiatr.* 2006 Sep;64(3A):664-7. PubMed PMID: 17119815.

120: Park JH, Kim JM, Roh JK. Hypoplastic vertebral artery: frequency and associations with ischaemic stroke territory. *J Neurol Neurosurg Psychiatry.* 2007 Sep;78(9):954-8. Epub 2006 Nov 10. PubMed PMID: 17098838; PubMed Central PMCID: PMC2117863.

121: Kim TK, Seo SI, Seol HY, Kwon BJ, Han MH. Mechanically-induced proximal arterial occlusion and stent-within-a-stent technique for the treatment of bilateral vertebral artery dissecting aneurysms. *Br J Radiol.* 2006 Nov;79(947):e166-70. PubMed PMID: 17065279.

122: Arnold M, Boussier MG, Fahrni G, Fischer U, Georgiadis D, Gandjour J, Benninger D, Sturzenegger M, Mattle HP, Baumgartner RW. Vertebral artery dissection: presenting findings and predictors of outcome. *Stroke.* 2006 Oct;37(10):2499-503. Epub 2006 Sep 7. Erratum in: *Stroke.* 2007 Jan;38(1):208. PubMed PMID: 16960096.

123: Aggrawal A, Setia P. Vertebral artery dissection revisited. *J Clin Pathol.* 2006 Sep;59(9):1000-2. PubMed PMID: 16935980; PubMed Central PMCID: PMC1860470.

124: Kantarci F, Mihmanli I, Albayram MS, Barutca H, Gulsen F, Kocer N, Islak C. Follow-up of

extracranial vertebral artery stents with Doppler sonography. *AJR Am J Roentgenol.* 2006 Sep;187(3):779-87. PubMed PMID: 16928945.

125: Ahn JY, Han IB, Kim TG, Yoon PH, Lee YJ, Lee BH, Seo SH, Kim DI, Hong CK, Joo JY. Endovascular treatment of intracranial vertebral artery dissections with stent placement or stent-assisted coiling. *AJNR Am J Neuroradiol.* 2006 Aug;27(7):1514-20. PubMed PMID: 16908571.

126: Sheah K, Hui F, Wansaicheong G, Khoo M. Retropharyngeal haemorrhage from a vertebral artery branch treated with distal flow arrest and particle embolisation. *Singapore Med J.* 2006 Aug;47(8):719-23. PubMed PMID: 16865216.

127: Inoue T, Tsutsumi K, Shigeeda T. Terson's syndrome as the initial symptom of subarachnoid hemorrhage caused by ruptured vertebral artery aneurysm. Case report. *Neurol Med Chir (Tokyo).* 2006 Jul;46(7):344-7. PubMed PMID: 16861828.

128: Ionete C, Omojola MF. MR angiographic demonstration of bilateral duplication of the extracranial vertebral artery: unusual course and review of the literature. *AJNR Am J Neuroradiol.* 2006 Jun-Jul;27(6):1304-6. Review. PubMed PMID: 16775285.

129: Strub WM, Leach JL, Tomsick TA. Left vertebral artery origin from the thyrocervical trunk: a unique vascular variant. *AJNR Am J Neuroradiol.* 2006 May;27(5):1155-6. PubMed PMID: 16687563.

130: Qureshi AI, Kirmani JF, Harris-Lane P, Divani AA, Ahmed S, Ebrihim A, Al Kawi A, Janjua N. Vertebral artery origin stent placement with distal protection: technical and clinical results. *AJNR Am J Neuroradiol.* 2006 May;27(5):1140-5. PubMed PMID: 16687560.

131: Huston J 3rd, Bernstein MA, Riederer SJ. Feathering: Vertebral artery pseudostenosis with elliptical centric contrast-enhanced MR angiography. *AJNR Am J Neuroradiol.* 2006 Apr;27(4):850-2. PubMed PMID: 16611777.

132: Martinez Del Pero M, Majumdar S, Coley SC, Parker AJ. Near fatal haemorrhage 35 years after radiation for laryngeal cancer: emergency embolisation of a vertebral artery aneurysm. *Emerg Med J.* 2006 Apr;23(4):e26. PubMed PMID: 16549558; PubMed Central PMCID: PMC2579529.

133: Dong ZH, Fu WG, Guo DQ, Xu X, Chen B, Jiang JH, Yang J, Shi ZY, Wang YQ. Endovascular repair for a huge vertebral artery pseudoaneurysm caused by Behcet's disease. *Chin Med J (Engl).* 2006 Mar 5;119(5):435-7. PubMed PMID: 16542591.

134: Ando K, Yoshida S, Yamauchi H, Kubo S, Kusaba H. Separate development of nitric oxide synthase- and vasoactive intestinal polypeptide-immunoreactive nerves arising from the vertebral artery in the rat. *J Vet Med Sci.* 2006 Feb;68(2):125-30. PubMed PMID: 16520533.

135: Savitz SI, Ronthal M, Caplan LR. Vertebral artery compression of the medulla. *Arch Neurol.* 2006 Feb;63(2):234-41. PubMed PMID: 16476812.

136: Inui Y, Oiwa Y, Terada T, Nakakita K, Kamei I, Hayashi S. De novo vertebral artery dissecting aneurysm after contralateral vertebral artery occlusion—two case reports. *Neurol Med Chir (Tokyo).* 2006 Jan;46(1):32-6. PubMed PMID: 16434824.

137: Zhou PQ, Shen L, Yang YP, Xie J. [Clinical observation of puerarin in treating patients with vertebral artery insufficiency due to cervical spondylosis: a report of 123 cases]. *Zhong Xi Yi Jie He*

Xue Bao. 2006 Jan;4(1):80-1. Chinese. PubMed PMID: 16409979.

138: Chen WL, Chern CH, Wu YL, Lee CH. Vertebral artery dissection and cerebellar infarction following chiropractic manipulation. *Emerg Med J*. 2006 Jan;23(1):e1. PubMed PMID: 16373786; PubMed Central PMCID: PMC2564146.

139: Torina PJ, Flanders AE, Carrino JA, Burns AS, Friedman DP, Harrop JS, Vacarro AR. Incidence of vertebral artery thrombosis in cervical spine trauma: correlation with severity of spinal cord injury. *AJNR Am J Neuroradiol*. 2005 Nov-Dec;26(10):2645-51. PubMed PMID: 16286417.

140: Kalkan E, Paksoy Y, Reisli R, Topatan H. Distress triggered cervical root compression pain by looped vertebral artery. *Neurol India*. 2005 Sep;53(3):367-8. PubMed PMID: 16230820.

141: Spengos K, Tsivgoulis G, Stouraitis G, Vassilopoulos D, Toulas P, Gialafos E. Neurological picture. Hemifacial spasm, neuralgia, and syncope due to cranial nerve compression in a patient with vertebral artery ectasia. *J Neurol Neurosurg Psychiatry*. 2005 Nov;76(11):1500. PubMed PMID: 16227538; PubMed Central PMCID: PMC1739408.

142: Endo H, Otawara Y, Ogasawara K, Ogawa A, Nakamura S. Ruptured vertebral artery dissecting aneurysm followed by spontaneous acute occlusion and early recanalization: case report. *Neurol Med Chir (Tokyo)*. 2005 Aug;45(8):400-3. PubMed PMID: 16127257.

143: de Andrade GC, de Oliveira JG, Dauar RF, Nalli DR, Braga FM. [Dissecting aneurysm of the intracranial fenestrated vertebral artery submitted to endovascular treatment: case report]. *Arq Neuropsiquiatr*. 2005 Jun;63(2A):352-6. Review. Portuguese. PubMed PMID: 16100991.

144: Matsumoto K, Kimura S, Kakita K. Endovascular treatment of vertebral artery aneurysm manifesting as progressive hemifacial spasm. *Neurol Med Chir (Tokyo)*. 2005 Jul;45(7):360-2. PubMed PMID: 16041182.

145: Giray S, Pelit A, Kizilkilic O, Karatas M. Isolated abducens nerve palsy caused by contralateral vertebral artery dolichoectasia. *Neurol India*. 2005 Jun;53(2):246-7. PubMed PMID: 16010080.

146: Ogasawara K, Sasaki M, Tomitsuka N, Kubo Y, Inoue T, Ogawa A. Early revascularization in a patient with perfusion computed tomography/diffusion-weighted magnetic resonance imaging mismatch secondary to acute vertebral artery occlusion. Case report. *Neurol Med Chir (Tokyo)*. 2005 Jun;45(6):306-10. PubMed PMID: 15973064.

147: Thanvi B, Munshi SK, Dawson SL, Robinson TG. Carotid and vertebral artery dissection syndromes. *Postgrad Med J*. 2005 Jun;81(956):383-8. Review. PubMed PMID: 15937204; PubMed Central PMCID: PMC1743284.

148: Richter RR, Reinking MF. Evidence in practice. How does evidence on the diagnostic accuracy of the vertebral artery test influence teaching of the test in a professional physical therapist education program? *Phys Ther*. 2005 Jun;85(6):589-99. Review. PubMed PMID: 15921479.

149: Sheah K, Lim W, Chan C. Endovascular and surgical management of vertebral artery dissecting aneurysms presenting with subarachnoid haemorrhage: medium-term experience. *Ann Acad Med Singapore*. 2005 Apr;34(3):262-70. PubMed PMID: 15902348.

150: Kumar S. Calcified vertebral artery and "dense basilar artery sign" in a patient with basilar territory infarction. *Neurol India*. 2005 Mar;53(1):125. PubMed PMID: 15805678.

- 151: Iwamuro Y, Nakahara I, Tanaka M, Higashi T, Watanabe Y, Harada K, Fujimoto M, Oku T. Occlusion of the vertebral artery secondary to dissection of the subclavian artery-case report. *Neurol Med Chir (Tokyo)*. 2005 Feb;45(2):97-9. PubMed PMID: 15722608.
- 152: Barrow DL. Supplementary comment on "Histological study of the normal vertebral artery-etiology of dissecting aneurysms". *Neurol Med Chir (Tokyo)*. 2005 Jan;45(1):71. PubMed PMID: 15699626.
- 153: Sato T, Sasaki T, Suzuki K, Matsumoto M, Kodama N, Hiraiwa K. Histological study of the normal vertebral artery-etiology of dissecting aneurysms. *Neurol Med Chir (Tokyo)*. 2004 Dec;44(12):629-35; discussion 636. PubMed PMID: 15684594.
- 154: Chen YL, Hsu YD, Lee JT. Fibromuscular dysplasia of the vertebral artery presenting with lateral medullary syndrome: a case report. *Acta Neurol Taiwan*. 2004 Dec;13(4):198-202. PubMed PMID: 15666696.
- 155: McCabe DJ, Pereira AC, Clifton A, Bland JM, Brown MM; CAVATAS Investigators. Restenosis after carotid angioplasty, stenting, or endarterectomy in the Carotid and Vertebral Artery Transluminal Angioplasty Study (CAVATAS). *Stroke*. 2005 Feb;36(2):281-6. Epub 2005 Jan 13. PubMed PMID: 15653582.
- 156: Okada Y, Shima T, Nishida M, Yamane K, Nakagawa I, Hori T. Intraoperative hemodynamic measurements of the vertebral artery and common carotid artery. *Neurol Med Chir (Tokyo)*. 2004 Oct;44(10):509-15. PubMed PMID: 15633463.
- 157: Liu LH, Chen CC, Chang MH. Clinical findings of intracranial vertebral artery disease using magnetic resonance angiography. *Acta Neurol Taiwan*. 2004 Sep;13(3):120-5. PubMed PMID: 15508938.
- 158: Arai M. Ipsilateral axial lateropulsion as an initial symptom of vertebral artery occlusion. *J Neurol Neurosurg Psychiatry*. 2004 Nov;75(11):1648. PubMed PMID: 15489412; PubMed Central PMCID: PMC1738813.
- 159: Kizilkiliç O, Oğuzkurt L, Yildirim T, Tercan F, Karakurum B, Karaca S, Giray S, Arlier Z. [Endovascular treatment of vertebral artery origin stenosis in high risk patients]. *Tani Girisim Radyol*. 2004 Sep;10(3):252-8. Turkish. PubMed PMID: 15470631.
- 160: Wenban AB. [Wallenberg's syndrome secondary to dissection of the vertebral artery caused by chiropractic manipulation]. *Rev Neurol*. 2004 Sep 1-15;39(5):497; author reply 497. Spanish. PubMed PMID: 15378467.
- 161: Koenigsberg RA, Vakil N. The often-neglected vertebral artery. *Stroke*. 2004 Nov;35(11):2433-4. Epub 2004 Sep 9. PubMed PMID: 15359071.
- 162: Kanda M, Shinoda S, Masuzawa T. Ruptured vertebral artery-posterior inferior cerebellar artery aneurysm associated with pulseless disease-case report. *Neurol Med Chir (Tokyo)*. 2004 Jul;44(7):363-7. Review. PubMed PMID: 15347213.
- 163: Ko YG, Park S, Kim JY, Min PK, Choi EY, Jung JH, Joung B, Choi D, Jang Y, Shim WH. Percutaneous interventional treatment of extracranial vertebral artery stenosis with coronary stents. *Yonsei Med J*. 2004 Aug 31;45(4):629-34. PubMed PMID: 15344203.

- 164: Wei GK, Wei J, Zhou HH, Zhou BB, Chen F, Huang R, Li XJ. [Influence of cervical curvature change on the nerve root and vertebral artery of patients with cervical spondylosis and clinical observation of manipulation treatment]. *Zhong Xi Yi Jie He Xue Bao*. 2003 Nov;1(4):259-61. Chinese. PubMed PMID: 15339525.
- 165: Liu WP, Xing ZH, Tan HY. [Clinical observation on treatment of cervical spondylosis of vertebral artery type with Jingkang Decoction]. *Zhong Xi Yi Jie He Xue Bao*. 2004 May;2(3):181. Chinese. PubMed PMID: 15339438.
- 166: Cacciola F, Phalke U, Goel A. Vertebral artery in relationship to C1-C2 vertebrae: an anatomical study. *Neurol India*. 2004 Jun;52(2):178-84. PubMed PMID: 15269464.
- 167: Kizilkilic O, Oguzkurt L, Tercan F, Yalcin O, Tan M, Yildirim T. Subclavian steal syndrome from the ipsilateral vertebral artery. *AJNR Am J Neuroradiol*. 2004 Jun-Jul;25(6):1089-91. PubMed PMID: 15205155.
- 168: Chen CJ, Tseng YC, Lee TH, Hsu HL, See LC. Multisection CT angiography compared with catheter angiography in diagnosing vertebral artery dissection. *AJNR Am J Neuroradiol*. 2004 May;25(5):769-74. PubMed PMID: 15140717.
- 169: Saito K, Kimura K, Nagatsuka K, Nagano K, Minematsu K, Ueno S, Naritomi H. Vertebral artery occlusion in duplex color-coded ultrasonography. *Stroke*. 2004 May;35(5):1068-72. Epub 2004 Apr 1. PubMed PMID: 15060317.
- 170: Buckenham TM, Wright IA. Ultrasound of the extracranial vertebral artery. *Br J Radiol*. 2004 Jan;77(913):15-20. Review. PubMed PMID: 14988133.
- 171: Cohen JE, Gomori JM, Umansky F. Endovascular management of spontaneous bilateral symptomatic vertebral artery dissections. *AJNR Am J Neuroradiol*. 2003 Nov-Dec;24(10):2052-6. PubMed PMID: 14625232.
- 172: Lewis MJ, Greenwood RJ, Brew S, Jäger HR. Economy class stroke syndromes: vertebral artery dissection revisited. *J Neurol Neurosurg Psychiatry*. 2003 Nov;74(11):1594-5. PubMed PMID: 14617730; PubMed Central PMCID: PMC1738257.
- 173: Menéndez-González M, García C, Suárez E, Fernández-Díaz D, Blázquez-Menes B. [Wallenberg's syndrome secondary to dissection of the vertebral artery caused by chiropractic manipulation]. *Rev Neurol*. 2003 Nov 1-15;37(9):837-9. Spanish. PubMed PMID: 14606051.
- 174: Chan PN, Yu SC, Boet R, Poon WS, Ahuja AT. A rare congenital anastomosis between the vertebral artery and internal carotid artery. *AJNR Am J Neuroradiol*. 2003 Oct;24(9):1885-6. PubMed PMID: 14561621.
- 175: Restrepo L, Pradilla G, Llinas R, Beauchamp NJ. Perfusion- and diffusion-weighted MR imaging-guided therapy of vertebral artery dissection: intraarterial thrombolysis through an occipital vertebral anastomosis. *AJNR Am J Neuroradiol*. 2003 Oct;24(9):1823-6. PubMed PMID: 14561610.
- 176: Mehta B, Burke T, Kole M, Bydon A, Seyfried D, Malik G. Stent-within-a-stent technique for the treatment of dissecting vertebral artery aneurysms. *AJNR Am J Neuroradiol*. 2003 Oct;24(9):1814-8. PubMed PMID: 14561608.
- 177: Irie F, Toyoda K, Hagiwara N, Fujimoto S, Okada Y. Babinski-Nageotte syndrome due to vertebral artery dissection. *Intern Med*. 2003 Sep;42(9):871-4. Review. PubMed PMID: 14518679.

- 178: Tamano Y, Kobayashi T, Hagiwara S, Tanaka N, Ide M, Kawamura H. Aneurysm of the distal posterior inferior cerebellar artery originating from the extracranial and extradural vertebral artery. *Neurol Med Chir (Tokyo)*. 2003 Jun;43(6):301-3. PubMed PMID: 12870549.
- 179: Sakai K, Kameda M, Tanimoto T, Terasaka K, Sugatani H, Higashi T. Ruptured vertebral artery dissecting aneurysm associated with parent artery occlusion. *Neurol Med Chir (Tokyo)*. 2003 Jun;43(6):298-300. PubMed PMID: 12870548.
- 180: Kao CL, Tsai KT, Chang JP. Large extracranial vertebral aneurysm with absent contralateral vertebral artery. *Tex Heart Inst J*. 2003;30(2):134-6. PubMed PMID: 12809256; PubMed Central PMCID: PMC161900.
- 181: Hui AC, Boet R, Cheng CA. Spontaneous extra-cranial vertebral artery dissection. *Can J Neurol Sci*. 2003 May;30(2):150-1. PubMed PMID: 12774955.
- 182: Courtheoux P, Guarnieri J, Theron J. [Endovascular treatment of a cervical vertebral artery pseudoaneurysm using covered stents. One case report]. *J Neuroradiol*. 2003 Mar;30(2):109-14. French. PubMed PMID: 12717297.
- 183: Cloud GC, Crawley F, Clifton A, McCabe DJ, Brown MM, Markus HS. Vertebral artery origin angioplasty and primary stenting: safety and restenosis rates in a prospective series. *J Neurol Neurosurg Psychiatry*. 2003 May;74(5):586-90. PubMed PMID: 12700299; PubMed Central PMCID: PMC1738438.
- 184: Pérez Navero JL, Montero-Shiemann C, Velasco Jabalquinto MJ, Ibarra de la Rosa I, Antón Gamero M, Salas Molina J. [Fatal outcome after severe cerebellar infarction due to spontaneous dissection of the vertebral artery]. *An Pediatr (Barc)*. 2003 Apr;58(4):385-9. Spanish. PubMed PMID: 12681189.
- 185: Kuroki T, Aoki K, Aoki Y, Nemoto A, Yamazaki T, Katsume M, Takasu N. Cranial nerve pareses following wrapping of a ruptured dissecting vertebral artery aneurysm: a possible complication of cyanoacrylate glue-case report. *Neurol Med Chir (Tokyo)*. 2003 Jan;43(1):35-7. PubMed PMID: 12568320.
- 186: Jissendi Tchofo P, Rodesch G, Duret M, Baleriaux D. [Natural evolution of an aneurysm of the V4 segment of the vertebral artery into a giant aneurysm. A case report]. *J Neuroradiol*. 2002 Dec;29(4):275-80. French. PubMed PMID: 12538946.
- 187: Iizuka T, Sakai F. Headache and spontaneous vertebral artery dissection. *Intern Med*. 2002 Dec;41(12):1094-5. PubMed PMID: 12521193.
- 188: Cloud GC, Markus HS. Diagnosis and management of vertebral artery stenosis. *QJM*. 2003 Jan;96(1):27-54. Review. PubMed PMID: 12509646.
- 189: Fukunaga A, Tabuse M, Naritaka H, Nakamura T, Akiyama T. Spontaneous resolution of nontraumatic bilateral intracranial vertebral artery dissections. *Neurol Med Chir (Tokyo)*. 2002 Nov;42(11):491-5. PubMed PMID: 12472213.
- 190: Sagoh M, Shinoda J, Ajimi Y. Ruptured dissecting aneurysm of the vertebral artery associated with occlusive internal carotid artery dissection-case report. *Neurol Med Chir (Tokyo)*. 2002 Sep;42(9):387-90. PubMed PMID: 12371595.

- 191: Reddy M, Schöggel A, Saringer W, Reddy B, Matula C. Traumatic arteriovenous fistula of the vertebral artery. *Neurol Med Chir (Tokyo)*. 2002 Jul;42(7):289-92. PubMed PMID: 12160307.
- 192: Schneider G. Vertebral artery complications following gentle cervical treatments. (Comment on Mann T and Refshauge KM, *Australian Journal of Physiotherapy* 47: 255-266.). *Aust J Physiother*. 2002;48(2):151. PubMed PMID: 12047211.
- 193: Ginestal RC, Martínez-Castrillo JC, Sánchez-Bueno C, Callejo JM, Herrero A, Montilla S, Alvarez-Cermeño JC. [Thrombosis of the vertebral artery, shown on angioresonance, in the lateral bulbar syndrome]. *Rev Neurol*. 2002 Feb 16-28;34(4):351-4. Spanish. PubMed PMID: 12022051.
- 194: Berroir S, Sarazin M, Amarenco P. Vertebral artery dissection presenting as neuralgic amyotrophy. *J Neurol Neurosurg Psychiatry*. 2002 Apr;72(4):552-3. PubMed PMID: 11909926; PubMed Central PMCID: PMC1737845.
- 195: Meder JF, Bracard S, Arquizan C, Trystram D, Frédy D. [Endovascular treatment using endoprosthesis and metallic stents for aneurysmal dissection of the intracranial vertebral artery]. *J Neuroradiol*. 2001 Sep;28(3):166-75. Review. French. PubMed PMID: 11894523.
- 196: Bhattacharya RN, Menon G, Nair S. Dissecting intracranial vertebral artery aneurysms. *Neurol India*. 2001 Dec;49(4):391-4. Review. PubMed PMID: 11799414.
- 197: Prabhakar S, Bhatia R, Khandelwal N, Lal V, Das CP. Vertebral artery dissection due to indirect neck trauma : an underrecognised entity. *Neurol India*. 2001 Dec;49(4):384-90. PubMed PMID: 11799413.
- 198: Oya S, Tsutsumi K, Yonekura I, Inoue T. Infra-posterior inferior cerebellar artery aneurysm arising after occlusion of the ipsilateral vertebral artery-case report. *Neurol Med Chir (Tokyo)*. 2001 Nov;41(11):545-7. PubMed PMID: 11758707.
- 199: Ochiai H, Yamakawa Y, Kubota E. Deformation of the ventrolateral medulla oblongata by subarachnoid hemorrhage from ruptured vertebral artery aneurysms causes neurogenic pulmonary edema. *Neurol Med Chir (Tokyo)*. 2001 Nov;41(11):529-34; discussion 534-5. Review. PubMed PMID: 11758704.
- 200: Benndorf G, Herbon U, Sollmann WP, Campi A. Treatment of a ruptured dissecting vertebral artery aneurysm with double stent placement: case report. *AJNR Am J Neuroradiol*. 2001 Nov-Dec;22(10):1844-8. PubMed PMID: 11733313.

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