Internal Carotid Artery Aneurysm open repair without mandibular subluxation: a case report.

Rezende, ANCA; Pitta, CA; Manzioni, R; Portela, LDA;
Sotelo, FJB. Ipiranga Hospital, Brazil, march 2018.

Abstract

Extracranial carotid artery aneurysms (ECCAs) are rare, with an estimated incidence of less than 1% . [1,6,8,9,11,12,17] They can have different etiologies: atherosclerotic (main etiology), dysplastic, infectious, inflammatory and post-traumatic. [1,4,9,12] The diagnosis can be made by CT-Angiogram, but the gold-standard is digital subtraction angiography. [4] Their treatment, not yet been well stablished, [6,11] can be open repair, which is a safe surgical option with low prevalence of complications [3,7,12] (mostly cerebral ischemia [6,9]) endovascular repair, or conservative. [5] Most open repairs require submandibular subluxation, because of the site of the aneurysm. [13,14,15,16] We describe the case of a 61-year-old white women with a cervical bulging (Figure 1), pulsatile at the physical exam, and occipital headache. CT angiogram (Figure 2) showed: signs of dissection of right vertebral artery and a fusiform aneurysm dilatation of the left internal carotid artery. Since patient had two different type of lesions in two different artery sites, the possibility of fibromuscular dysplasia was considered as a differential diagnosis. Since the kinking made endovascular repair unfavorable to be done, open repair was opted and an aneurysm resection was carried out (Figures 3 to 5), with primary end-to-end anastomosis of the internal carotid artery with the internal carotid artery. During the surgical procedure, it was noticed that, because of the location and kinking of the aneurysm, the mandibular subluxation wasn't necessary (an uncommon feature for this type of surgery). The products of the biopsy specimen were cultured and analyzed histo and anatomopathologycally which subsequently excluded the possibility of FMD.

Figures



Fig. 1 Patient's bulging on left cervical area 2 (arrow)

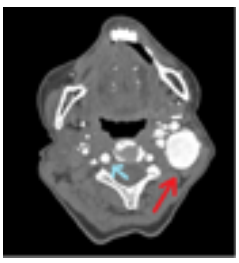


Fig. 2 CT angiogram —> left interior carotid aneurysm (red arrow); vertebral artery dissection (blue arrow).

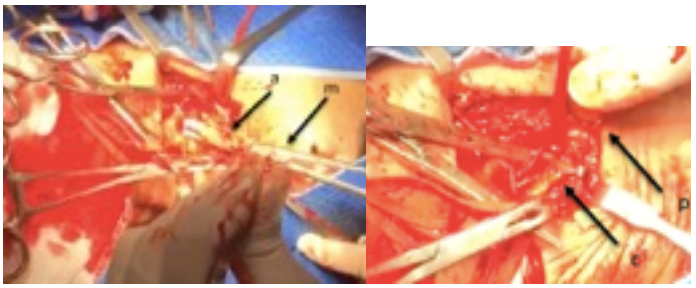


Fig. 4 Partial resection of the aneurysm (a – aneurysm; m- metzenbaum)

Fig. 5 End-to-end anastomosis (c) of the ICA.

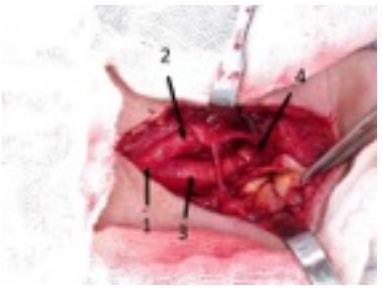


Figure 3. Internal carotid aneurysm shown after dissection (1 = Common Carotid Artery(CCA); 2= External Carotid Artery (ECA); 3= Internal Carotid Artery (ICA); 4= post anastomotic ICA).

Recent Publications (minimum 5)

1.Jiber H, Zrihni Y, Naouli H, Bouarhroum A. Fibrodysplasic aneurysms of the extracranial internal carotid artery: a new case report. Published online 2017 Oct 23; Pan Afr Med J. 2017; 28: 170.

2- Narula N, Kadian-Dodov D, Olin JW. Fibromuscular Dysplasia: Contemporary Concepts and Future Directions. Prog Cardiovasc Dis. 2018 Mar 10.

3- Mascia D, Gabriel SA, Kahlberg A, Bertoglio L, Melissano G, Chiesa R.Single center experience with extracranial carotid aneurysm open repair. J Cardiovasc Surg (Torino). 2016 Jun 10.

4- Gai D, Burgess C, Goh C, Atkinson N, Iseli T. Extracranial internal carotid aneurysm masquerading as a parapharyngeal tumour. ANZ J Surg. 2016 Oct 17.

5-Yamamoto S, Akioka N, Kashiwazaki D, Koh M, Kuwayama N, Kuroda S. Surgical and Endovascular Treatments of Extracranial Carotid Artery Aneurysms-Report of Six Cases. J Stroke Cerebrovasc Dis. 2017 Jul;26(7):1481-1486.

6- Hongo H, Inoue T, Tamura A, Saito I.Surgical strategy to minimize ischemia during trapping/resection of giant extracranial carotid artery aneurysm stratified by collateral evaluation. Surg Neurol Int. 2017 Feb 20;8:28.

7- 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.

8- Jin C, Hu Z, He Y.A wide-necked extracranial internal carotid artery saccular aneurysm with ipsilateral proximal compression. J Clin Ultrasound. 2017 Feb;45(2):116-120.

9- Skóra JP, Kurcz J, Korta K, Szyber P, Dorobisz TA, Dorobisz AT.
Surgical management of extracranial carotid artery aneurysms. Vasa. 2016;45(3):223-8.

10- Han DK, Tadros RO, Chung C, Patel A, Marin ML, Faries PL. Endovascular Treatment of 2 Synchronous Extracranial Carotid Artery Aneurysms Using Stent-Assisted Coil Embolization and Double Bare-Metal Stenting. Vasc Endovascular Surg. 2016 Feb;50(2):102-6.

11- Rivera-Chavarría IJ, Alvarado-Marín JC. Endovascular repair for an extracranial internal carotid aneurysm with cervical access: A case report. Int J Surg Case Rep. 2016;19:14-6.

12- Bartoli MA, Sarlon-Bartoli G, Chetaille B, Magnan PE. Saccular aneurysm and kink of the extracranial internal carotid artery secondary to fibromuscular dysplasia. J Vasc Surg. 2015 Nov;62(5):1326-7.

13- Simonian GT, Pappas PJ, Padberg FT Jr, Samit A, Silva MB Jr, Jamil Z, Hobson RW 2nd. Mandibular subluxation for distal internal carotid exposure: technical considerations. J Vasc Surg. 1999 Dec;30(6):1116-20.

14- Capoccia L, Montelione N, Menna D, Cassoni A, Valentini V, Iannetti G, Sbarigia E, Speziale F. Mandibular subluxation as an adjunct in very distal carotid arterial reconstruction: incidence of peripheral and cerebral neurologic sequelae in a single-center experience. Ann Vasc Surg. 2014 Feb;28(2):358-65.

15- Dardik H, Orozco V, Hessler L, Gasparyan A. Improved exposure for carotid endarterectomy. J Vasc Surg. 2012 Oct;56(4):1166-7.

16- Fortes FS, da Silva ES, Sennes LU. Mandibular subluxation for distal cervical exposure of the internal carotid artery. Laryngoscope. 2007 May;117(5):890-3.

17- McCollumCH, WheelerWG, NoonGP, DeBakeyME. Aneurysms of the extracranial carotid artery. Twenty-one years' experience. Am J Surg.1979;137(2):196-200.



Biography:
Amanda Rezende is a vascular resident with an interest in arterial pathologies and surgery. But her main goal is to bring an up to date treatment to her clients. She has built this model after years of experience in research, evaluation, and student orientation in Ipiranga Hospital (Brazil). Her Alma mater is an internationally known university (State University of Campinas - UNICAMP) which introduced her to research. Email: amandancar@gmail.com

Notes/Comments: