

Headache caused by vertebral artery dissection. Case report*

Cefaleia causada por dissecação de artéria vertebral. Relato de caso

Sidney Sredni¹, Rosemeire Aparecida Franchin Sredni²

* Received from the Vale sem Dor Group. São José dos Campos, SP.

SUMMARY

BACKGROUND AND OBJECTIVES: Spontaneous vertebral artery dissection is rare, but it is a very frequent cause of cerebral ischemic accident in young patients. The identification of this disease is paramount for adequate clinical intervention and brain ischemia prevention.

CASE REPORT: Female patient, 30 years old, secretary, with ictal presentation of severe and deep cervical pain irradiating to nucha and posterior head, at the same side to the left, which has evolved with headache and cerebral ischemic accident.

CONCLUSION: Identification and immediate and adequate treatment of arterial dissection may prevent ischemic lesions, thus contributing for better patients' clinical evolution.

Keywords: Cerebral ischemic accident, Headache, Vertebral artery.

RESUMO

JUSTIFICATIVA E OBJETIVOS: A ocorrência de dissecação espontânea da artéria vertebral é rara, mas é uma causa bastante frequente de acidente vascular encefálico isquêmico (AVEi) em pacientes jovens. O reconhecimento desta doença é de suma importância para intervenção clínica adequada e prevenção da isquemia cerebral.

RELATO DO CASO: Paciente do sexo feminino, 30 anos, secretária, apresentou quadro ictal de dor intensa, profunda na região cervical com irradiação para a nuca

e parte posterior da cabeça, do mesmo lado, à esquerda, que evoluiu com cefaleia e AVEi.

CONCLUSÃO: O reconhecimento da dissecação arterial e o tratamento imediato e correto podem prevenir a ocorrência de lesões isquêmicas e dessa forma contribuir para melhor a evolução clínica do paciente

Descritores: Acidente vascular encefálico, Artéria vertebral, Cefaleia.

INTRODUCTION

Spontaneous dissection of cervical carotid and vertebral arteries is a relatively uncommon disease, with incidence of 2.5 to 3/100,000 people per year for the first, and of 0.5 to 2.5/100,000 people per year for the second^{1,2}. It is responsible for just 2% of all cerebral ischemic accidents. However, when considering just patients aged below 40 years, dissection is responsible for 25% of cases²⁻⁴. So, its early identification is critical to prevent cerebral ischemic accidents and to improve patients' prognosis.

CASE REPORT

Female patient, 30 years old, secretary, who presented sudden severe and deep pain in the cervical region with irradiation to the nucha and posterior head, to the left. The very severe pain prevented her from moving at all. She felt left arm tingling irradiating from the neck to fingers. She sought for the emergency unit and was medicated with non-steroid anti-inflammatory drugs and common analgesics. Initial diagnosis was torticollis. Cervical X-rays were normal. Since there has been no improvement, head CT was indicated and has shown normal results. She received 100 mg tramadol, with mild improvement with regard to early presentation and was discharged for outpatient follow up. When trying to stand up, she felt discomfort with nausea and dizziness. Since it was very late, she was admitted to the hospital. The next day, she had the same severe

1. Neurologist and Pain Clinician; Director of the "Vale sem Dor" Group. São José dos Campos, SP, Brazil.

2. Oncologist Nurse. São José dos Campos, SP, Brazil

Correspondence to:

Sidney Sredni, M.D.

Av. Adhemar de Barros, 566 – Sala 301

12245-010 São José dos Campos, SP.

Phone/Fax: (12) 3922-4771

E-mail: grupovalesemdor@live.com

pain, in the same sites, with dizziness, nausea, difficulty to stand up and walk. Clinical evaluation has shown positive Rhombert, changes in finger-nose and finger-finger coordination tests more to the left, and hypoesthesia of left arm (LA). Doppler of carotid and vertebral arteries was requested and has shown narrowing of left vertebral artery, suggesting vertebral artery dissection. Angioresonance of cervical and intracranial vessels has confirmed left vertebral artery dissection, and head magnetic resonance (MR) has identified area of infarction in cerebellar hemisphere to the left and pons. Treated with analgesics and anticoagulants she evolved satisfactorily with recovery of the cerebellar infarction, however with mild headache for 20 days, with outpatient follow up after hospital discharge.

DISCUSSION

The frequency of headache or facial pain is high, with incidence of 60% to 95% in carotid dissection^{2,5} and of 70% in vertebral artery dissection^{2,6-8}. Headache diagnostic criteria presented in item 6.5 of the international headache classification (IHC)⁹ are: a. Any new headache, facial pain or cervical pain, with acute onset, with or without other neurological signs or symptoms meeting criteria C and D; b. Dissection shown by vascular investigation and/or adequate neuroimaging; c. Pain appears in a narrow time frame at the same side of the dissection; d. Pain disappears within one month.

Headache with or without neck pain may be the only manifestation of the dissection and, undoubtedly, is the most frequent symptom in 55% to 100% of patients, being also the most common early symptom in 33% to 86% of patients^{2,9,10}.

In our case, clinical presentation started with sudden, new and acute pain as described in item A of IHS. It is important to review the warning signs when evaluating headaches: first or worst headache, especially if with sudden onset, headache after effort, onset after 50 years of age, fever, meningeal signs, worsening during the observation period, presence of focal sign and papilledema. Complementary exams are mandatory in the presence of some of those symptoms. However, these data were initially neglected by the medical team who made the first call and who have given more importance to neck pain and its investigation.

Headache and facial pain after dissections are usually unilateral, severe and persistent, in average lasting four days and gradually improving in up to 30 days^{1,3-5,13}. There is, however, no specific pattern and it may be often misleading, simulating other headaches such as

migraine, cluster headache, thunderclap headache and subarachnoid hemorrhage. Our patient had severe pain, without improvement with drugs and with undefined pattern. This factor, associated to described data, should have been more valued to identify the etiology of the presentation.

In approximately 2/3 (61%) of patients with vertebral artery dissection, headache is simultaneous with vertebrobasilar ischemia signs^{1,5-8,10-12}, and in 1/3 of patients headache comes before other neurological symptoms with interval of 1h to 14 days^{1,2,5,10,12-14}. Patient had left arm paresthesia at onset, which was initially interpreted as a consequence of the cervical problem and not as a possible ischemic event. After several hours, however, patient started to present clear signs of cerebellar territory lesions with dizziness and nausea.

These data have also not called the attention of the medical team, because the patient was only admitted to the hospital due to long emergency room stay and because it was too late, and not due to clinical worsening, since she had been discharged. Normal CT, allowing discarding subarachnoid hemorrhage, has given the false sensation of tranquility with regard to the clinical presentation. Headache precedes ischemia onset, thus needing early diagnosis and treatment.

Diagnosis is based on color Doppler of cervical arteries, on MRI, angioresonance and/or helical CT and, in borderline cases, on conventional angiography. Several methods may be necessary, since any one of them may be normal¹⁵. In our case, both Doppler and angioresonance have confirmed the presence of dissection and head MRI has confirmed lesions of cerebellar hemisphere and pons^{2,14}.

There are no randomized studies on the treatment, but there is consensus favoring anticoagulation for 3 to 6 months, according to arterial recovery and injured artery flow recanalization^{4,5}.

In spite of the severity of the presentation, the prognosis is in general good. Less than 5% of cases lead to death and approximately 75% of patients have good cerebral ischemic accident recovery¹⁴. Dissection recurrence is uncommon but may occur in other vessels of the same patient. Recurrence chance in 2 months is 2% and decreases to 1% one year later.

CONCLUSION

Cervical vessels dissection is a poorly recognized and poorly diagnosed disorder, leading to increased incidence of cerebral ischemic accidents, especially in young people. Its early diagnosis helps preventing lesions which

may be permanent neurologic lesions affecting patients' quality of life or leading them to death.

REFERENCES

1. Schievink WI. Spontaneous dissection of the carotid and vertebral arteries. *N Engl J Med*. 2001;344(12):898-906.
2. Flis CM, Jäger HR, Sidhu PS. Carotid and vertebral artery dissections: clinical aspects, imaging features and endovascular treatment. *Eur Radiol*. 2007;17(3):820-34.
3. Ducrocq X, Lacour JC, Debouverie M, et al. Cerebral ischemic accidents in young subjects. A prospective study of 296 patients aged 16 to 45 years. *Rev Neurol*. 1999;155(8):575-82.
4. Kratz SN, Butke KH. Vertebral artery dissection presenting as acute cerebrovascular accident. *J Emerg Med*. 2011;40(2):151-7.
5. Silbert PL, Mokri B, Schievink WI. Headache and neck pain in spontaneous internal carotid and vertebral artery dissections. *Neurology*. 1995;45(8):1517-22.
6. Biousse V, D'Anglejan-Chatillon J, Massiou H, et al. Head pain in non-traumatic artery dissection: a series of 65 patients. *Cephalalgia*. 1994;14(1):33-6.
7. Biousse V, D'Anglejan-Chatillon J, Touboul PJ, et al. Time course of symptoms in extracranial carotid artery dissections. A series of 80 patients. *Stroke*. 1995;26(2):235-9.
8. Biousse V, Touboul PJ, D'Anglejan-Chatillon J, et al. Ophthalmologic manifestations of internal carotid artery dissections. *Am J Ophthalmol*. 1998;126(4):565-7.
9. Headache Classification Subcommittee of the International Headache Society. *The International Classification of Headache Disorders: 2nd ed. Cephalalgia*. 2004;24(Suppl 1):9-160.
10. Fisher CM. The headache and pain of spontaneous carotid dissection. *Headache*. 1982;22(1):60-5.
11. Evans RW, Mokri B. Headache in cervical artery dissections. *Headache*. 2002;42(10):1061-3.
12. Ramadan NM, Tietjen GE, Levine SR, et al. Scintillating scotomata associated with internal carotid artery dissection: report of three cases. *Neurology*. 1991;41(7):1084-7.
13. Dziewas R, Konrad C, Drager B, et al. Cervical artery dissection--clinical features, risk factors, therapy and outcome in 126 patients. *J Neurol*. 2003;250(10):1179-84.
14. Krespi Y, Gurol ME, Coban O, et al. Vertebral artery dissection presenting with isolated neck pain. *J Neuroimaging*. 2002;12(2):179-82.
15. 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;193(4):1167-74.

Submitted in August 01, 2012.

Accepted for publication in November 09, 2012.