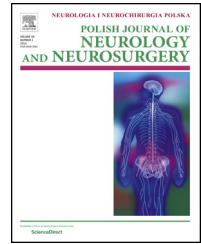


Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: <http://www.elsevier.com/locate/pjnns>

## Case report

# Endovascular management of carotid artery dissections with the use of new generation stents and protection systems

Paweł Latacz<sup>a,\*</sup>, Marian Simka<sup>b</sup>, Tadeusz Popiela<sup>c</sup>, Paweł Brzegowy<sup>c</sup>, Marek Moskała<sup>d</sup>

<sup>a</sup>Department of Vascular Surgery, University Hospital, Krakow, Poland

<sup>b</sup>Department of Nursing, College of Applied Sciences, Ruda Śląska, Poland

<sup>c</sup>Chair of Radiology, Jagiellonian University Collegium Medicum, Krakow, Poland

<sup>d</sup>Department of Neurosurgery and Neurotraumatology, University Hospital, Krakow, Poland

## ARTICLE INFO

## Article history:

Received 12 February 2016

Received in revised form

23 June 2016

Accepted 19 July 2016

Available online xxx

## Keywords:

Dissection

Carotid Artery

Angioplasty

## ABSTRACT

Dissection of the internal carotid artery (ICA) is a rare disease, but in young patients is responsible for about 20% of cerebral events. We presented three different cases of ICA dissection, including one iatrogenic and two spontaneous ones, which were successfully managed endovascularly, with the use of different techniques, different protection devices and stents. In this article, the clinical management and details of procedures were described.

© 2016 Polish Neurological Society. Published by Elsevier Sp. z o.o. All rights reserved.

Dissection of the internal carotid artery (ICA) is a rare disease, but in young patients is responsible for about 20% of cerebral events [1]. Whatever the cause, it represents a big therapeutic challenge, especially if the dissection is located intracranially, in the petrous or more distal segments of the artery. In this paper we present three different cases of ICA dissection, including one iatrogenic and two spontaneous ones. Iatrogenic dissection involved most of the ICA, from its proximal part (C1) up to the ophthalmic segment (C6). One spontaneous dissection was associated with an aneurysm of the ICA and affected the ICA from the petrous (C2) to the ophthalmic segment (C6), while the other dissection extended from proximal part of the artery up to its lacerum segment (C3). The later resulted in

cerebral stroke, despite adequate anticoagulation. All these three patients were successfully managed endovascularly, with the use of different techniques, different protection devices and stents, which were chosen respecting anatomical challenges associated with each particular case.

## 1. Case presentations

### 1.1. Patient 1

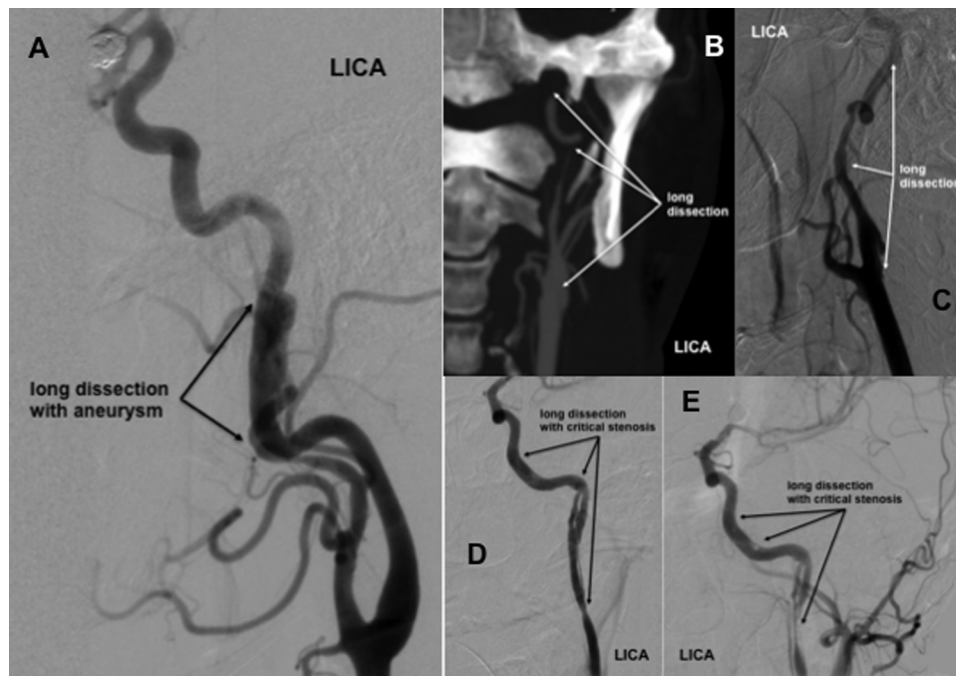
A 54-year-old male patient with a history of embolization of symptomatic aneurysm of the middle cerebral artery (MCA).

\* Corresponding author at: Department of Vascular Surgery, University Hospital, Krakow, ul. Botaniczna 3, Krakow, Poland. Tel.: +48 12 4248642.

E-mail address: [pawlat@me.com](mailto:pawlat@me.com) (P. Latacz).

<http://dx.doi.org/10.1016/j.pjnns.2016.07.006>

0028-3843/© 2016 Polish Neurological Society. Published by Elsevier Sp. z o.o. All rights reserved.



**Fig. 1 – Angiographies before endovascular repair: (A) catheter angiography in patient 1. (B) CT angiography in patient 2; (C) catheter angiography in patient 1, a long dissection of the left internal carotid artery with aneurysmatic dilatation; (D and E) catheter angiography in patient 3, a long dissection of the left internal carotid artery with false canal and critical stenosis; LICA—the left internal carotid artery.**

During embolization of this aneurysm there has also been revealed a dissection of the left ICA. This dissection was unlikely to be of iatrogenic character, since it was revealed by catheter angiography, prior to any intervention (Fig. 1A). Taking into account a high risk of cerebral embolism caused by dissected artery and contraindications for anticoagulant therapy, we decided to perform endovascular treatment of the dissection with the use of a self-expanding covered stent.

### 1.2. Patient 2

A 47-year-old male patient, a blue-collar worker with symptomatic idiopathic dissection of the left ICA, which probably was caused by an intense physical exertion. The dissection originated from proximal part of the ICA and extended to the lacerum segment (C3) of the artery (Fig. 1B and C). Initially the patient was managed conservatively with oral anticoagulants, but after 2 months of such a treatment, despite adequate anticoagulation, he developed cerebral stroke of the left hemisphere. Therefore, we decided to address the dissection endovascularly and perform the angioplasty with implantation of a stent into the dissected artery and to use a proximal protection system.

### 1.3. Patient 3

A 25-year-old female patient with a history of subarachnoid hemorrhage, which occurred in February 2015 and was caused by an aneurysm of the MCA. She has been managed with endovascular embolization of this aneurysm. At follow-up

digital angiography revealed a properly embolized aneurysm, but there was a new aneurysmal dilatation of the MCA, which was located proximally from the previous one, and also a long dissection of the left ICA, which extended from its proximal part up to its clinoid segment (C5). In addition, there was a critical stenosis in the middle part of dissection and a long false channel (Fig. 1D and E). The dissection was probably of iatrogenic character and resulted from previous endovascular intervention. After consultation by vascular team, taking into account contraindications for long-term anticoagulation (a history of subarachnoid hemorrhage and the presence of intracranial aneurysm), we decided to address the dissection endovascularly and to cover the distal part of dissected artery with a new generation self-expanding carotid stent. We implanted the RoadSaver™ stent (Terumo, Tokyo, Japan), which is a double layer mesh self-expanding device. We have chosen this stent because of its high flexibility (the lesion involved distal part of the ICA) and also because it can be used as a flow-diverter stent.

## 2. Interventions

### 2.1. Patient 1

Considering tortuous course of the artery at the site of dissection, we decided to use a self-expanding covered stent and a distal protection system. Firstly, over the hydrophilic AqWire™ guidewire (Covidien, ev3 Endovascular, Inc., Plymouth, MN, USA) we cannulated the left external carotid

Download English Version:

<https://daneshyari.com/en/article/8457531>

Download Persian Version:

<https://daneshyari.com/article/8457531>

[Daneshyari.com](https://daneshyari.com)