

Internal carotid artery dissection triggered by the act of defecation

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Citation

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Abstract

Background and purpose

. Defecation can precipitate the onset of acute cardiovascular diseases. Case report. A 54 year-old woman presented 3 episodes of right brachiofacial weakness with left amaurosis after an intensive effort of defecation in a context of severe constipation. These neurological disorders were secondary to a left internal carotid artery dissection triggered by defecation. Conclusion . To the best of our knowledge, it's the first description of an internal artery dissection induced by an effort of defecation.

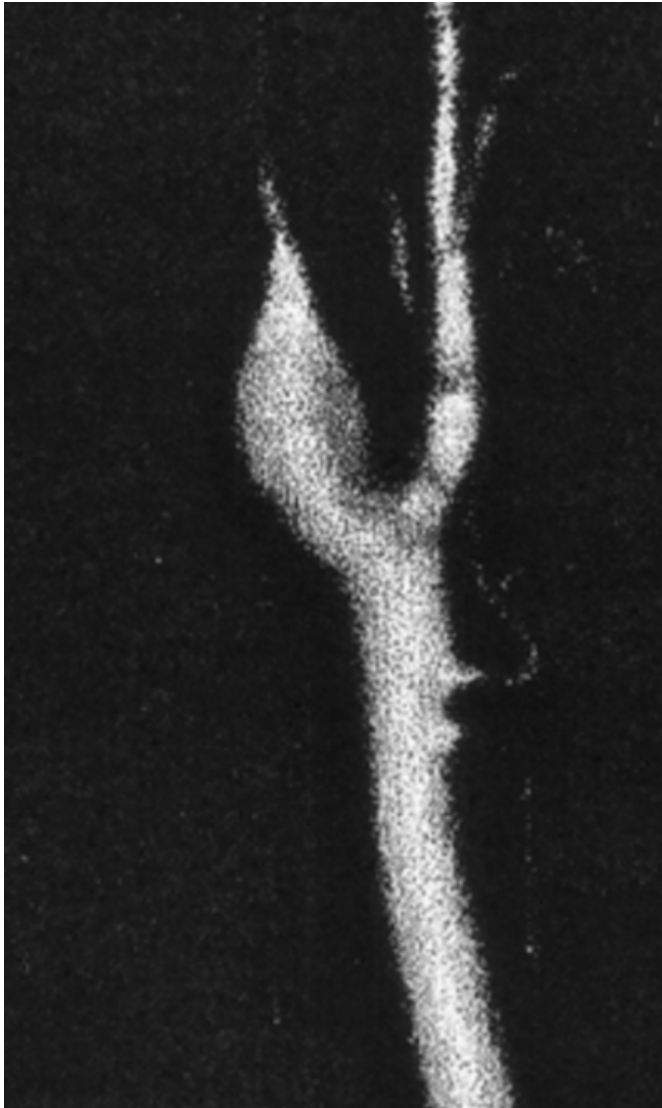
CASE SUMMARY

A 54 year-old woman, with a personal history of arterial hypertension and a familial history of stroke (father), presented 3 stereotyped episodes of neurological disorders after an act of defecation. The first episode occurred immediately after the completion of defecation in a context of constipation: after two intensive efforts of defecation, she

felt a left amaurosis and weakness in her right hand during a few minutes. Four days after, she presented a spontaneous isolated aphasia (right-handed woman), regressive in 10 minutes. Four days after, a new transitory neurological trouble occurred with paresthesias and weakness in her right hand and face during 10 minutes. Between these 3 transitory episodes, the neurological examination was normal.

Figure 1

Figure 1: Angiographic tomodensitometry of left carotid arteries : dissection of the left internal carotid artery



Cerebral CT-scan and MRI were normal.

Electrocardiographic monitoring and trans-oesophageal echocardiographic examination were normal. The angiographic tomodensitometry of cervical and cerebral arteries showed a left ICA dissection, with dilatation of the carotid bulb and filiform stenosis in the upper part (Fig. 1).

Anticoagulant treatment and laxative therapies were performed with a favorable outcome.

DISCUSSION

Defecation can precipitate the onset of acute cardiovascular diseases as acute pulmonary thromboembolism, acute myocardial infarction, sudden cardiac death, or subarachnoidal haemorrhage.¹ Other neurological disorders have ever been described as defecation syncope² or a rare

case of defecation-induced vertigo revealing an arachnoid cyst of the quadrigeminal cistern.³ We report a case of internal carotid artery (ICA) dissection after defecation.

ICA dissection is responsible for approximately 5% of ischemic strokes in adults, particularly in the third to fifth decade.⁴ The most established cause of ICA dissection is a cervicocranial trauma, sometimes minor as sport and fitness activity, chiropractic manipulation, violent coughing, nose-blowing, eating, brushing teeth, shaving, playing tennis, skiing or vomiting.^{4,5} Some cases have been described after scuba diving,⁶ or Heimlich maneuver,⁷ but never after defecation. The proposed mechanisms to explain ICA dissection after trivial traumas are: a) sudden and severe neck hyperextension with fixation of the ICA against the transverse process of the atlas and axis associated with a neck rotation causing arterial impingement and intimal tearing; b) direct crushing of the ICA between a cervical transverse process and angle of the mandible; c) direct blow to the neck; d) basilar skull fracture, e) intraoral trauma.⁴

In defecation, supplementary mechanisms similar to a Valsalva maneuver occur an increase of intraabdominal pressure and intrathoracic pressure, associated with decrease of venous return, cardiac output and peripheral blood flow.⁸ In case of squatting position during the act of defecation, there is an increase of the filling pressure of the heart along with the stroke output of the heart leading to a reflexive peripheral vasodilatation.⁸ However, these specific features of defecation contribute to embolization of thrombus and development of syncope and sudden death,⁸ but can not explain the occurrence of an ICA dissection. For our case, as for most cases of ICA dissection after trivial trauma, the cause is an hyperextension of neck during a particularly violent effort of defecation in a context of constipation. So, defecation and constipation must be add to the list of potential causes of ICA dissection.

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