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Clinical case

A case of dorsolateral pontine infarct: Description of a new vascular alternating syndrome

Description d'un syndrome alterne du tronc cérébral : à propos d'un cas d'infarctus de la partie dorsolatérale de la protubérance

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ABSTRACT

Introduction. – Inferolateral pontine infarcts are well-described lesions of the anterior inferior cerebellar artery territory with a wide variety of clinical presentations. We report the case of isolated unilateral hearing loss and contralateral sensation of coldness due to a dorsolateral lower pontine infarct.
Case description. – We describe the case of a 48-year-old female patient who developed isolated selective high-frequency hearing loss on the left side, and contralateral hemibody sensation of coldness. MRI showed a left-sided dorsolateral lower pontine ischemic lesion. A subsequent angiogram revealed the lesion to result from the spontaneous dissection of a long circumferential branch of the basilar artery.
Conclusion. – To our knowledge, this is the first reported case of a vascular alternating syndrome consisting of isolated ipsilateral hearing loss and contralateral thermal dysesthesia from a dorsolateral lower pontine infarct. Occlusion of a long perforating branch of the basilar artery and consequent posterolateral lower pontine infarct may result in an alternating syndrome with subtle clinical symptoms. Knowledge of this type of syndrome may direct physicians towards the diagnosis of a dorsolateral lower pontine infarct, despite vague clinical complaints.

Mots clés :
Syndrome alterne
Infarctus
Protubérance
Artère basilaire
Anévrisme
Longue branche circonférentielle

RÉSUMÉ

Introduction. – Les infarctus de la protubérance inférolatérale du territoire de l'artère cérébelleuse inféro-antérieure peuvent produire une symptomatologie clinique variée. Nous décrivons le cas d'une perte d'audition ipsilatérale à la lésion, accompagnée d'une dysesthésie thermique controlatérale à un infarctus de la portion dorsolatérale de la protubérance inférieure.
Cas clinique. – Une femme de 48 ans a développé une perte d'audition sélective aux hautes fréquences, accompagnée d'une sensation de froid de l'hémicorps controlatéral. L'imagerie par résonance magnétique a mis en évidence une lésion ischémique de la portion dorsolatérale de la protubérance inférieure du côté gauche. L'angiographie conventionnelle a révélé que cette lésion résultait d'une dissection spontanée d'une longue branche circonférentielle de l'artère basilaire.
Conclusion. – À notre connaissance, il s'agit du premier cas rapporté d'un syndrome alterne vasculaire caractérisé par une perte d'audition unilatérale et d'une dysesthésie thermique controlatérale résultant d'un infarctus de la portion dorsolatérale de la protubérance inférieure. L'occlusion d'une longue branche perforante de l'artère basilaire peut causer un infarctus pontique se traduisant en un syndrome alterne se manifestant par une symptomatologie frustre. La reconnaissance de ce syndrome permettra de guider les cliniciens vers le diagnostic d'une atteinte du tronc cérébral.

Abbreviations: AICA, Anterior inferior cerebellar artery; BA, Basilar artery; DLLPI, Dorsolateral pontine infarct; ILPIs, Inferolateral pontine infarcts.

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1. Introduction

Inferolateral pontine infarcts (ILPIs) are widely described lesions of the anterior inferior cerebellar artery (AICA) territory often resulting from occlusion of the AICA itself or at times from the more proximal vertebrobasilar system [1]. The classical AICA syndrome was first described by Adams et al. in 1943 in a patient with clinical evidence of damage to the inferolateral pons [2]. The wide range of clinical signs and symptoms of this syndrome is rarely fully exhibited by patients with ILPIs, which leads to the generally accepted term of "incomplete AICA syndrome" [1,3]. Nevertheless, even in cases with subtle clinical symptoms, knowledge of the specific description of individual incomplete syndromes may prompt physicians to suspect an ILPI. This is the first reported case, to our knowledge, of isolated ipsilateral hearing loss and contralateral thermal dysesthesia due to a dorsolateral pontine infarct (DLLPI).

2. Case report

A 48-year-old female patient, with no significant previous medical history, was admitted to the emergency department following a thunderclap headache and reduced level of consciousness. Three weeks earlier, the patient had consulted for complaints of right-sided hemiparesthesia, but no imaging was performed. Paresthesia persisted until her arrival at the hospital. Upon arrival, the patient was in an obtunded state (Glasgow Coma Scale 13) and deteriorated rapidly into a state of unresponsiveness. An immediate computed tomography (CT) scan showed a diffuse subarachnoid haemorrhage with secondary hydrocephalus (Fig. 1A). An emergency external ventricular drain was subsequently inserted and the immediate postoperative CT angiogram revealed a 6-mm aneurysm of a left long circumferential branch of the basilar artery (BA) (Fig. 1B, C). Conventional angiography performed the following day revealed the disappearance of the aneurysm and occlusion of the long circumferential branch, suggesting thrombosis of the dissecting aneurysm and the parent artery (Fig. 1D). The AICA was patent (Fig. 1D). Initial cerebral MRI revealed a hyper-intense lesion on T2 sequences at the left dorsolateral pons and inferior cerebellar peduncle, with no diffusion restriction (Fig. 2A–C). These images suggested that a spontaneous dissection of a long circumferential branch of the BA had occurred 3 weeks prior to admission, when the patient became symptomatic. Improvement of the patient's level of consciousness occurred 72 hours after admission. However, the patient complained of left ear hearing loss and a sensation of coldness on the right side of the body. In addition, she complained of intermittent diplopia, however upon examination, the extra-ocular movements were well-preserved. No evidence of vestibular deficit, or any other cranial nerve damage, was observed. Follow-up MRI at 3 weeks revealed regression of the medial aspect of the lesion (Fig. 3A, B). Six weeks following initial presentation, isolated hearing loss and contralateral hemibody thermal dysesthesia was unchanged. A pure tone audiometry revealed a high-frequency, severe to profound left sided sensorineuronal hearing loss (Fig. 4).

3. Discussion

Diagnosing brainstem infarcts is often challenging, as it requires rigorous knowledge of its anatomy. In order to facilitate

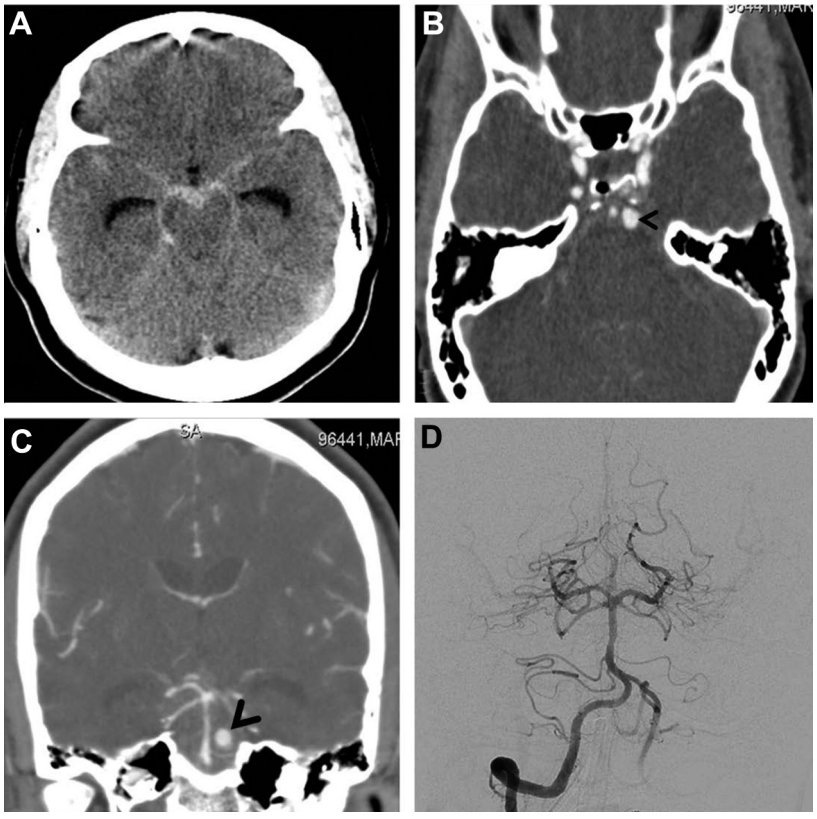

Fig. 1. A. Non-contrast brain CT-scan: subarachnoid haemorrhage and dilated temporal horns of the lateral ventricles. B, C. Initial angio-CT-scan, axial (B) and coronal (C) views: left-sided 6-mm long circumferential BA branch aneurysm(black arrow head). D. Cerebral conventional angiography: patent left AICA, occlusion of the left BA long circumferential branch and no evidence of any aneurysm.
A. Tomodensitométrie cérébrale sans contraste : hémorragie sous-arachnoïdienne et dilatation des cornes temporales des ventricules latéraux. B, C. Angiotomodensitométrie cérébrale initiale, coupes axiale (B) et coronale (C) : anévrisme de 6 mm d'une longue branche circonférentielle de l'artère basilaire du côté gauche. D. Angiographie cérébrale conventionnelle : artère cérébelleuse antéro-inférieure gauche perméable, occlusion de la longue branche circonférentielle de l'artère basilaire et absence d'opacification de l'anévrisme.

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