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【 CASE REPORT 】

Transient Prosopometamorphopsia Restricted to the Left Eye Caused by Ischemia at the Right Splenium of the Corpus Callosum

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Abstract:
We herein report a patient who developed transient prosopometamorphopsia restricted to the left eye caused by ischemia of the right splenium of the corpus callosum. A 66-year-old right-handed woman suddenly noticed that the left eyes of people she encountered appeared markedly adducted to their noses. On emergent admission, neurological and ophthalmological examinations revealed no abnormalities. Diffusion-weighted magnetic resonance imaging showed a small, hyperintense lesion at the right splenium of the corpus callosum. In this case, information on the right visual field projected to the left occipital lobe might have been obstructed on transmission to the right hemisphere through the splenium of the corpus callosum.

Key words: prosopometamorphopsia, splenium of the corpus callosum, ischemic stroke

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Introduction

Metamorphopsia includes a broad spectrum of visual perceptual distortions, such as alterations of perceived object size, contour, shape, movement, and number, and is a rare neurological symptom. This symptom can result from lesions anywhere in the visual pathway from the retina to the cerebral visual cortex (1, 2). Metamorphopsia involving faces has been termed “prosopometamorphopsia”. We herein report a patient who complained of prosopometamorphopsia restricted to the left eye, following ischemia of the right splenium of the corpus callosum.

Case Report

A 66-year-old right-handed woman with hypertension suddenly noticed that the left eye of her grandson appeared markedly adducted to his nose in November 2014, although the other parts of his face appeared normal (Figure A). When the woman looked at her daughter-in-law, her left eye also appeared adducted. This disconcerting experience continued for five hours without other visual, neurological, or psychosomatic abnormalities. Over the following two days, she repeatedly experienced the same phenomenon for hours with anyone that she looked at. During the attack, she was still able to identify the individual. Furthermore, she did not have any feelings of distortion or strangeness when looking at objects other than faces, such as letter alignment in newspapers. Three days after the first attack, she visited our institute. On emergent admission, neurological and ophthalmological examinations, such as the visual acuity test, Goldmann’s perimetry test, and fundoscopy, revealed no abnormalities. The results of blood tests and electroencephalography were normal. Diffusion-weighted magnetic resonance (MR) imaging showed a small, hyperintense lesion at the right splenium of the corpus callosum (Figure B), and MR angiography showed moderate stenosis at the basilar artery (Figure C). Based on a diagnosis of ischemic stroke, pharmacotherapy with oral aspirin was initiated. The patient has experienced no further attacks in the subsequent 13 months.

Discussion

Ischemia affecting the pathway from the occipital face area (OFA) to the fusiform face area (FFA) around the sple-

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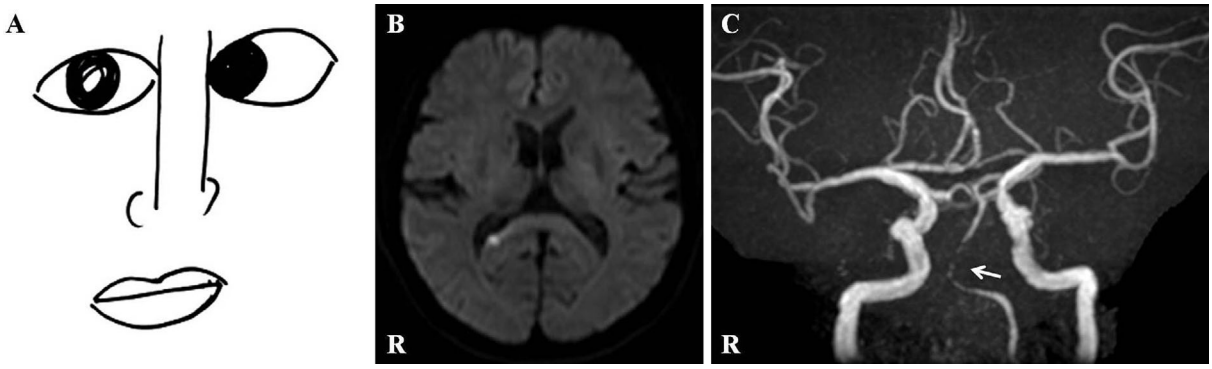

Figure. **(A) An illustration drawn by the patient. The left eye is markedly adducted. (B) Diffusion-weighted imaging on admission shows a small infarct at the right splenium of the corpus callosum. (C) MR angiography shows moderate stenosis of the basilar artery (arrow).**

Table. **Cases with Prosopometamorphopsia Due to Unilateral Ischemic or Hemorrhagic Lesions of the Splenium of the Corpus Callosum.**

Reference	Age/Sex	Lesion laterality	Diagnosis	Side of metamorphopsia	Objects included in metamorphopsia	Duration of symptom
(5)	53/M	right	infarction	right	eye, nose, mouth	nd
(6)	70/F		infarction	right	eye, mouth	1.5 years
Present case	66/F		infarction	right	eye	3 days
(3)	68/F		hemorrhage	left	eye, nose, mouth, facial outline	5 weeks
(7)	61/F		infarction	left	eye, nose, mouth, facial outline	>2.5 years
(8)	78/F		infarction	left	eye, nostril	18 days
(9)	51/F	left	infarction	right	eye, mouth, letters, other objects	2 months
(5)	58/F		infarction	right	eyelid, nose, facial outline	nd

nd: not described

nium is thought to cause unilateral prosopometamorphopsia (2-4). The unique features of the present case were as follows: 1) prosopometamorphopsia of the visual field ipsilateral to the infarct, whereas the contralateral visual field is typically affected; 2) restriction of prosopometamorphopsia to a single eye; and 3) transient and repeated attacks. Seven cases of unilateral prosopometamorphopsia caused by unilateral splenial lesions have been reported in the English and Japanese literature (Table) (3, 5-9). Three of the six cases (including the present case) involving a right splenial lesion showed prosopometamorphopsia of the visual field ipsilateral to the lesion, whereas both cases with a left splenial lesion showed prosopometamorphopsia contralateral to the lesion (5-7). The right cerebral hemisphere has been reported to be dominant in integrating facial information (10). Information from the right visual field projected to the left occipital lobe might therefore have been obstructed when transmitted to the right hemisphere through the splenium of the corpus callosum in the present case (5, 6).

The patient in our case complained of prosopometamorphopsia restricted to the eyes. Although no previous cases have described prosopometamorphopsia restricted to the eyes, all previous cases did involve prosopometamorphopsia that included the eyes (3, 5-9). Since expressions involving the eyes are considered the most important body actions perceived (11), prosopometamorphopsia might always include the eyes.

When the patient drew a picture of someone including their facial features based on memory, parts of the face other than the eyes seemed distorted. Whether the mismatch between her subjective complaints and the facial features she drew reflected "insensible" prosopometamorphopsia remains uncertain. In addition, mild damage due to minor ischemia seemed to result in transient, rather than persistent, prosopometamorphopsia.

The authors state that they have no Conflict of Interest (COI).

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