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LETTER

Foreign accent syndrome associated with left insula infarction after COVID-19 pneumonia

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Dear Editor,

During a COVID-19 pandemic, emergency care is challenging, but our mission as emergency physicians has always been to support the vulnerable in society [1]. Both physical and psychological symptoms must be taken into account when providing emergency medical care.

An 85-year-old right-handed woman was brought to the emergency room because of difficulty in speaking. She had just been discharged from the hospital yesterday after being treated for COVID-19 pneumonia with remdesivir and dexamethasone. On arrival, she exhibited effortful speech and a prosodic change perceived as a regional accent with dysprosody in the context of spared semantic and syntactic abilities. Hearing her strange voice, the hospital staff thought she was mentally ill. However, she seemed to be frustrated with her inability to speak smoothly, so we performed imaging diagnosis to see if there was something wrong with her body. Chest computed tomography showed multiple peripheral-dominant bands of shadows in the bilateral lower lung fields, which were considered to be changes after COVID-19 pneumonia (Fig. 1A). Head magnetic resonance imaging revealed hyperintense lesions involving the left insula on a diffusion-weighted imaging (Fig. 1B), but no change on fluid-attenuated inversion recovery images (Fig. 1C), suggesting hyperacute stroke. Magnetic resonance angiography indicated poor delineation of the upper branch of the left M2, suggesting reduced blood flow in this region, including the insular cortex (Fig. 1D). She was diagnosed with an acute stroke of the left insular cortex and was hospitalized for treatment.

COVID-19-associated coagulopathy is increasingly recognized, the most reported being ischemic stroke, which occurs primarily in the early stages of COVID-19 recovery [2]. In this case, the symptoms of the stroke were Foreign Accent Syndrome (FAS), and the hospital staff mistook her for being psychotic. FAS is a rare syndrome in which the rhythm and prosody of speech is altered, making the listener feel like a foreigner [3]. The pathogenesis of FAS is still unknown, but damage to the insular cortex seems to be one possible cause. The left insular and an adjacent frontal cortex were found sensitive to the phonetic-linguistic structure of verbal utterances by functional imaging studies, because it contributes to the actual coordination of the up to 100 muscles engaged in articulation and phonation [4].

Elderly people after COVID-19 are prone to physical, psychological, and social problems, and physical pathology may be hidden in psychological symptoms.

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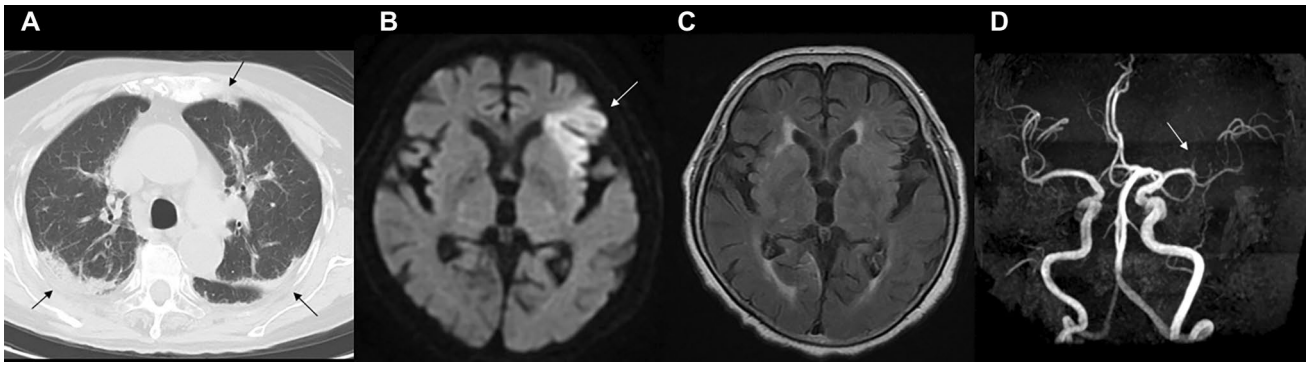

Fig. 1 Imaging data of the patient. **A** Chest computed tomography showed multiple peripheral-dominant bands of shadows in the bilateral lower lung fields, which were considered to be changes after COVID-19 pneumonia. **B** Head magnetic resonance imaging revealed hyperintense lesions involving the left insula on a diffusion-weighted imaging. **C** Fluid-attenuated inversion recovery images showed no abnormalities. **D** Magnetic resonance angiography indicated poor delineation of the upper branch of the left M2

Declarations

Conflict of interest The author reports no conflicts of interest.

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