뇌신경재활

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

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Diffusion tensor tractography revealing unexplained patient's ipsilateral hemiplegia

Na Na LIM[1*], Ji Hong Cheon[1], Geun Su Lee[1], Won Ki Hong[1], Eun Young Kang[1†], Youn Kyung Cho[1], Sung Hoon Lee[1], Hyun Kyung Lee[1]

Kwangju Christian Hospital, Department of Rehabilitation Medicine[1]

Introduction

A 47 year old female had a blunt traumatic injury to her head in march 2017. She was diagnosed as traumatic sub-dural hematoma on left fronto-temporal lobe with mid-line shifting, soon received hematome removal with craniectomy operation to reduce intracranial pressure caused by cerebral edema and swelling.

Clinical presentation

Her major brain lesion on the brain computed tomography was left fronto-temporal area but she had left side motor weakness instead of left hemisphere impairment such as right hemiplegia and the dysfunction of memory, calculation, executive function and language. Because the symptom did not correlate with the main anatomical lesion, we considered 2 possibilities which can explain her clinical presentation. First, are there anatomical variation of corticospinal tract? Second, missed diagnosis such as diffuse axonal injury caused by counter coup or ischemic infarct followed by cerebral edema?

Diagnosis

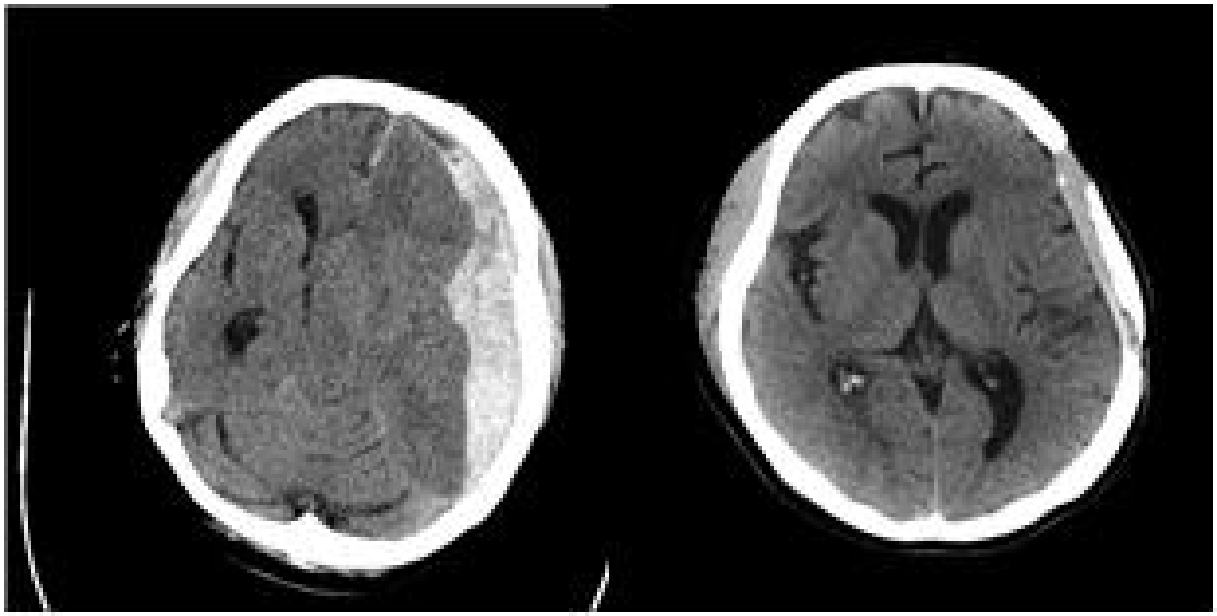
The diffusion tensor tractography revealed that decreased fiber volume of right corticospinal, corticorecticular and medial lemniscus tract comparing with left side. Against our expectation, tracts from left hemisphere were preserved within normal limits despite the huge sized hematoma on left hemisphere.

Discussion

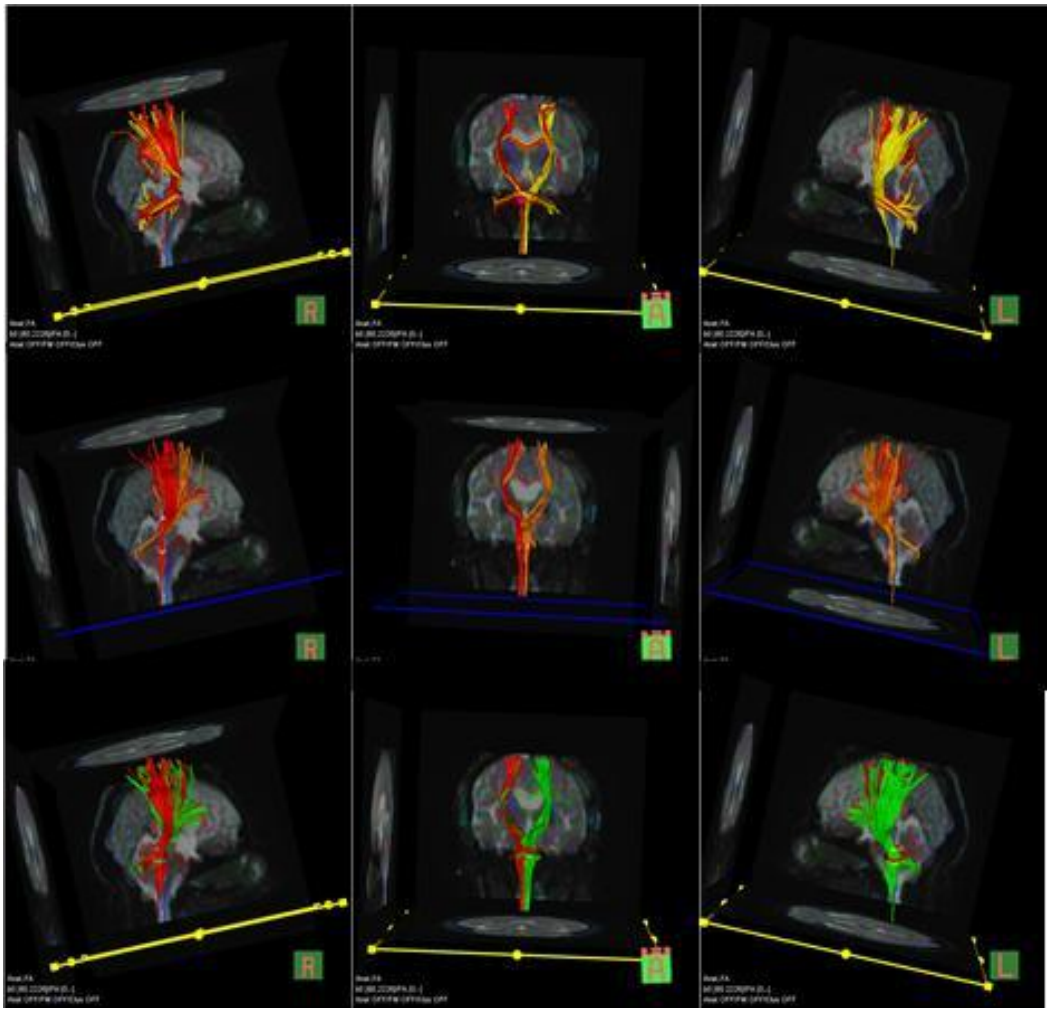
In the diffusion tensor tractography, there were no anatomical variation as her left tracts were normal. Furthermore, we could confirm that right MCA area infarction causing deficit of right tracts which correlates with the patient's neurological presentation.

Conclusion

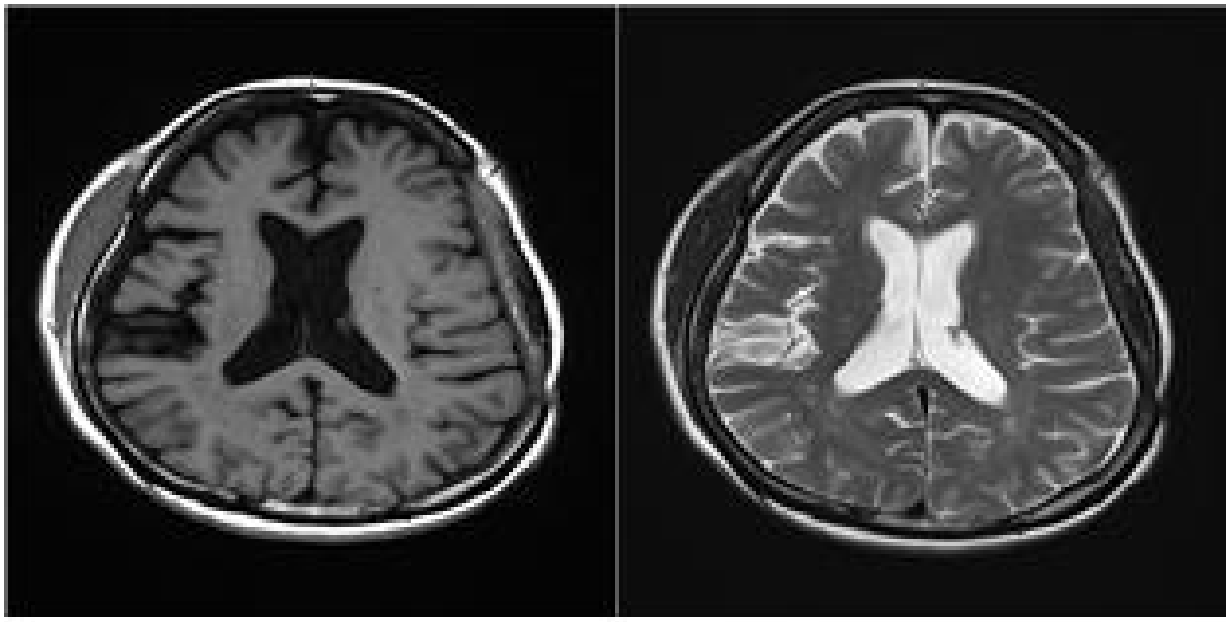
We could confirm causative lesion for unexplained ipsilateral hemiplegia by diffusion tensor tractography. Diffusion tensor tractography is a useful radiologic tool to reveal functional status of brain.



<Figure 1> Brain CT shows subdural hematoma on the left fronto-temporo-parietal lobe with midline shifting at the time of injury in march 2017(left), absorbed brain hematoma without hydrocephalus(right)



<Figure 2> Diffusion tensor tractography in July 2019A : Corticospinal tract(yellow), B : Corticorecticular tract(orange), C : medial lemniscus(green), Decreased fiber volume on right comparing with left side.



<Figure 3> Brain MRI in July 2019 reveals ischemic lesion on right MCA territory which was not seen in previous brain CT.