

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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Severe memory impairment as a rare complication of endoscopic brain biopsy: A Case Report

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Introduction

Endoscopic brain biopsy is a widely used technique for the diagnosis of brain lesions. Potential risks of this procedure such as hemorrhage, seizure and infection have been reported and established. Here we present a rare complication, severe memory impairment, after endoscopic brain biopsy.

Clinical presentation

20-years old male patient who suffered from headache, polydipsia and polyuria for 1 year visited our hospital. The patient was a college student, had good academic achievement, and had no previous memory or cognitive impairment. Brain MRI revealed pineal gland and suprasellar germinoma. Neuronavigation guided endoscopic brain biopsy was performed on the pineal gland via burr hole trephination at the right Kocher's point. After biopsy, the patient presented with retrograde amnesia and symptoms that he could not register the newly learned information. In the Korean Wechsler Adult Intelligence Scale-IV (K-WAIS-IV) test, intelligence quotient (IQ) was 67 (1 percentile, mild mental retardation) and memory quotient (MQ) was 43 (less than 0.1 percentile) in the Rey-Kim Memory Test. Korean-version of Mini-Mental State Examination (MMSE-K) score was 19 and a significant reduction was observed in the memory recall item. Follow-up brain MRI was performed and injury of the fornix was observed. During the biopsy, the normal structure of fornix around the foramen monro had been damaged.

Interventions

The patient was referred to the Department of Rehabilitation for treatment of cognitive and memory impairment. Bed-side memory trainings tasks such as daily diary writing were performed, and computer assisted cognitive rehabilitation therapy was performed in the rehabilitation unit. Donepezil, 10mg/day was used as a pharmacological treatment.

Outcomes

After one month of inpatient rehabilitation, MMSE-K improved from 19 to 26 and IQ improved from 67 to 84 on the K-WAIS-IV test. However, on the Verbal Learning Test that evaluates to delayed recall, T score was 27 (0.5 percentile) and there was no change. In a caregiver interview, the cognitive rehabilitation program improved the overall cognitive function and judgment, but the patient did not remember the words he had heard yesterday.

Discussion

The fornix, a part of Papez circuit, is a arch shaped nerve tracts acting as the major output tract of the hippocampus. Damage to any part of the structure of the Papez's circuit can cause memory impairment. The patient had memory impairment after fornix damage, and working memory was relatively unimpaired, but he had severe disability in memory recall. Since the fornix is located between the lateral ventricles, there is a need to be careful about fornix damage when procedures are performed around the lateral ventricles.

Conclusion

This case suggests that after mechanical injury of Papez's circuit including fornix, the cognitive rehabilitation therapy helps the recovery of the general cognitive impairment of the patient.

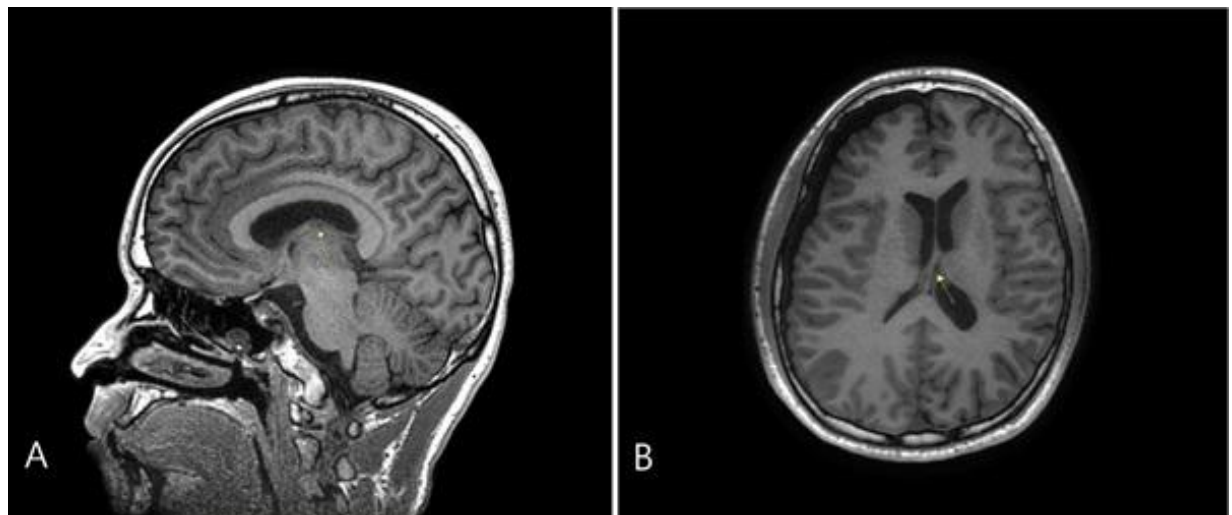


Fig 1. Brain MRI after endoscopic brain biopsy showing fornix injury; (A) Sagittal plane, (B) Axial plane.