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Case Report

Absence of interthalamic adhesion in a female cadaver: a case report

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ABSTRACT

The interthalamic adhesion is a midline structure that connects each thalami at the medial surface. It is about 1 cm in dimension. Sometimes it cannot be found. It has been questioned whether there is a correlation between absence of the interthalamic adhesion and pathological conditions. Therefore various clinical and postmortem studies carried on related with the absence or presence of this structure.

In this case, we observed that the interthalamic adhesion was absent in a 39-year-old female cadaver. We presented our case and discussed the literature to contribute the postmortem investigations. ***Neuroanatomy; 2007; 6: 39–40.***

Key words [interthalamic adhesion] [massa intermedia] [human] [cadaver] [absence]

Introduction

Thalami connect to each other by flat gray matter that called interthalamic adhesion (IA) that is about 1 cm in anteroposterior dimension. It contains neurons that some axons of which crossing the midline. IA occasionally may be absent or sometimes may be multiple. The IA is present in approximately 70-80% of human brains [1]. It has been thought that there is a relationship between the absence of the IA and pathological conditions. To identify this relation many clinical and postmortem investigations are conducted. In this study we aimed to contribute the related literature.

Case Report

During the routine dissections for education in the Department of Anatomy, Cumhuriyet University Faculty of Medicine, we observed that the interthalamic adhesion was absent in a 39-year-old female cadaver (Fig. 1). The cadaver showed no more additional morphological abnormality in the cerebral hemispheres.

Discussion

Many investigations were carried on both presence and absence of the IA in various populations. In the previous studies incidence of the presence of the IA varied between 60.3 % and 83 % [2]. Park et al [3] investigated 146 human brains (102 male, 44 female) in Korean cadavers that they were not known to have any diseases. It was observed that the IA was present in 129 of 146 cadavers (88.4%). It was the highest incidence reported. They stated that they could not explain why Koreans had such a high incidence. In addition, they also suggested difficulties in comparison since there were no other investigations related with the incidence of the IA in Asians.

Researchers have also investigated whether there is any correlation between the absence of the IA and schizophrenia. Meisenzahl et al [4] reported the absence of the IA as 23.3% in schizophrenic population whereas it was as 13.3% in normal control group. Despite of this difference there they have not find any statistical significance. In a similar study, Crippa et al [5] reported that the IA was absent in 7 male schizophrenic cases (18.42%) and in 4 in control group (3 males, 1 female, 10.53%). They also noted that there was no statistical significance between the two groups.

Sen et al [6] analyzed 161 (100 female, 61 male) patients with schizophrenia and observed that the IA was absent in 8.7% without considering sex. In an other study Nopoulos et al [7] reported the absence of the IA as 32.76% in patients with schizophrenia and as 13.5% in healthy control group; the incidence of absence of the IA was higher in patients than control group.

Erbagci et al [8] found that the IA was absent in 9 of 26 patients with schizophrenia (34.61%) and in 4 of 29 in the control group (13.71%). They suggested that the IA was more often absent in patients with schizophrenia than the healthy individuals.

Figure 1. Absence of the interthalamic adhesion (IA) in a 39-year-old female cadaver. Color version of figure is available online. ***(asterisks:*** *thalamus)*

Synder et [9] al studied with 82 (54 males, 28 females) patients having a diagnosis of first-episode schizophrenia and 52 healthy control subjects (30 males, 22 females). They designed the study on magnetic resonance imaging. The IA was absent more often among the patients with first-episode schizophrenia than the control group. In contrast, they did not observe similar findings in postmortem cases with chronic patients with schizophrenia. Hence it was thought that the absence of the IA might constitute a marker of early developmental neuropathologic changes among patients with first-episode schizophrenia. Rosales et al [10] supported these findings and postulated that the IA did not form in 3% of gestations, and this incidence would be increased by aging, and would be reached over 27% in 6th and 7th decades of life.

Several researchers focused on whether there was any relationship between the absence of the IA and sexual dimorphism. Thus, Malobabic et al [1] suggested that variety in presence and size of the IA showed sexual dimorphism, and they stated the IA was more frequently seen in females than males. Nopoulos et al [7] reported that the absence of the IA was higher in female patients with schizophrenia. Crippa et al [5] were also investigated the absence of the IA, since their study included only male cases, they found that the IA was absent prominently high in males, but they did not observe difference between males and females in the control group.

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