

## Unusually large interthalamic adhesion and its clinical importance

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### ABSTRACT

The interthalamic adhesion is a midline structure that connects the medial surfaces of two thalami. It is roughly about 1 cm in diameter. It may be absent in a few cases. We saw an unusually large interthalamic adhesion in a male cadaver. It was about 3 cm in cross sectional diameter and filled most of the third ventricle. Knowledge of this is important for neurosurgeons and radiologist. The large interthalamic adhesion may hinder the circulation of the cerebrospinal fluid. © IJAV. 2010; 3: 174–175.

**Key words** [thalamus] [interthalamic adhesion] [third ventricle] [brain] [cerebrospinal fluid]

### Introduction

Interthalamic adhesion is a structure that connects the medial surfaces of the two thalami. It crosses the cavity of the third ventricle. It is roughly about 1 cm in diameter and is made up of nerve cell bodies and a few nerve fibers. Exact function of the adhesion is not known as its absence has not caused any functional deficits. It is absent in about 20% of the cases. When enlarged, it may cause hindrance to the flow of cerebrospinal fluid. We saw an unusually large interthalamic adhesion and the same is being reported here.

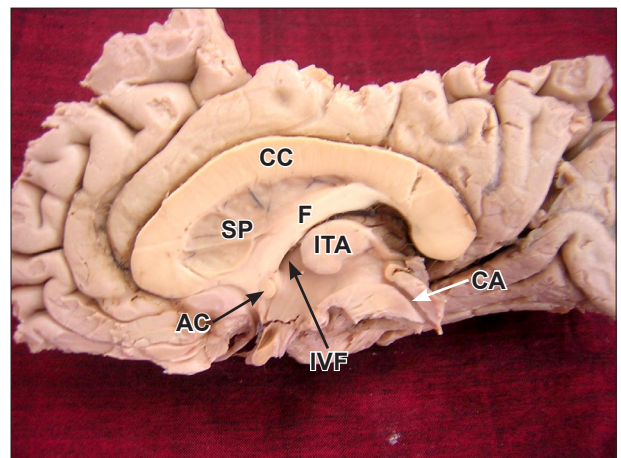
### Case Report

During regular dissections for undergraduate medical students at Melaka Manipal Medical College (Manipal Campus) we found an unusually large interthalamic adhesion (Figure 1). The variation was found in a male cadaver aged approximately 70 years. The interthalamic adhesion was coma shaped in sectional view and was about 3 cm in anteroposterior diameter. It connected most of the area on the medial surfaces of the two thalami. The cavity of the third ventricle was confined to the part below the hypothalamic sulcus. All the parts of the body and brain were normal other than the large size of the interthalamic adhesion.

### Discussion

Interthalamic adhesion is a variable structure and it may be totally absent [1]. In the past, several studies have been conducted on the variations of thalamus and interthalamic

adhesion. Malobabic et al. have reported the presence of interthalamic adhesion in 70-80 percent of cases [2]. In the study conducted by Samra and Cooper, its presence varied between 63% and 83% [3]. The highest percentage of occurrence of interthalamic adhesion is in Koreans (88.4%) as reported in a study on 146 healthy cadavers (102 male and 44 female) [4].



**Figure 1.** Medial surface of the cerebral hemisphere with abnormally large interthalamic adhesion. (ITA: interthalamic adhesion; F: fornix; SP: septum pellucidum; CC: corpus callosum; IVF: interventricular foramen; AC: anterior commissure; CA: cerebral aqueduct)

Absence of the interthalamic adhesion may be associated with schizophrenia. Crippa et al. have reported absence of interthalamic adhesion in 18.42% of schizophrenic individuals and in 10.53% of normal individuals [5]. In another study by Meisenzahl et al. it was absent in 23.3% of schizophrenic population and in 13.3% of normal population [6]. Sen et al. [7] and Erbagci et al. [8] also have presented similar reports.

Various studies in the past explain the percentage of absence but there are very few studies or reports on the size of the interthalamic adhesion. There is no report on abnormally large interthalamic adhesion in normal

population. In the case that we are reporting here, there were no other defects in the brain or any other part of the body.

The unusually large interthalamic adhesion like the one reported here might hinder the free circulation of cerebrospinal fluid in the third ventricle. It might also lead to misdiagnosis by the radiologists. It may be mistaken for a diencephalon tumor blocking the third ventricle. So in any radiological observations where the major part of third ventricle looks to be blocked, the presence of enlarged interthalamic adhesion has to be kept in mind.

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