Interthalamic adhesion

The interthalamic adhesion (also known as the mass intermedia or middle commissure) is a flattened band of tissue that connects both parts of the thalamus at their medial surfaces. The medial surfaces form the upper part of the lateral wall to the third ventricle.



In mammals other than humans, it is a large structure. In humans it is only about one centimetre long, though In females it is larger by about 50%.

Sometimes it is in two parts and 20% to 30% of the time it is absent.

In 1889, a Portuguese anatomist by the name of Macedo examined 215 brains, showing that male humans are approximately twice as likely to lack an interthalamic adhesion as are female humans. He anecdotally attributed the finding to a "prevailing feature of people deprived of [the interthalamic adhesion] is to present in their psychical acts a remarkable precipitation, joined to a certain dysharmony between internal and external feelings". Its absence is seen to be inconsequential.

The interthalamic adhesion contains nerve cells and nerve fibers; a few of the latter may cross the middle line, but most of them pass toward the middle line and then curve laterally on the same side. It is still uncertain whether the interthalamic adhesion contains fibers that cross the midline and for this reason it is inappropriate to call it a commissure.

The interthalamic adhesion is notably enlarged in patients with the type II Arnold-Chiari malformation.

The medial surface of the thalamus constitutes the upper part of the lateral wall of the third ventricle, and is connected to the corresponding surface of the opposite thalamus by a flattened gray band, the Interthalamic adhesion (massa intermedia, middle commissure).

When absent in development, no noticeable deficit has been observed.

Lesions located posterior to the massa intermedia pose a technical challenge, as the use of a rigid endoscope for performing both an ETV and EBX is limited.

Roth and Constantini, recommend using a combined rigid-flexible endoscope for endoscopic third ventriculostomy and biopsy to approach posterior third ventricular tumors (behind the massa intermedia). This technique overcomes the limitations of using a rigid endoscope by reaching 2 distant regions ¹⁾.

1)

Roth J, Constantini S. Combined rigid and flexible endoscopy for tumors in the posterior third ventricle. J Neurosurg. 2015 Jun;122(6):1341-6. doi: 10.3171/2014.9.JNS141397. Epub 2015 Mar 27. PubMed PMID: 25816082.

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