Endoscopic Neuronavigated Fenestration of Symptomatic "Cavum Septum Pellucidum"

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Physiopathology

The cyst of the septum pellucidum (CSP) occurs in the center of the corpus callosum at the 3th month of gestation.

At approximately the 6th month of gestation, the cavum begins to close in a caudal-to-rostral direction and several months after the birth normally CSP disappears.

However, abnormalities in the closing of the CSP cavity are seen in 0,3-1,75% of cases on post-natal CT scans. These close-down imperfections of CSP are usually thought to be a variation of normal anatomy and most cases are asymptomatic.
Liss and Mervis described three variations of the septum pellucidum:

- First (50%): single midline membrane with an ependymal lining on each ventricular surface.
- Second (25%): two separate but closely apposed leaves that delineate a potential space.
- Third (25%): cavum septum pellucidum; the leaves of the septum are visibly separated by a space of variable size.
Non neoplastic cysts of the septum pellucidum are of two general forms.

The first, the asymptomatic cavum septum pellucidum, is a common incidental finding during imaging of the central nervous system and may be associated with a cavum vergae or cavum velum interpositum.

Incidence: 20.3% with a slightly higher in males, in professional boxers and patients with schizophrenia.
Physiopathology

The second form of nonneoplastic cyst is the true septum pellucidum cyst. This represents an abnormal symptomatic expansion of a cavum septum pellucidum (expanding cyst of septum pellucidum).

Because there are no radiographic criteria for identifying a true septum pellucidum cyst, its distinction is based on the development of neurological symptoms in association with the expansion of an existing cavum.

Pathophysiological consequences of expanding septum pellucidum cyst.

- **A** = Interventricular foraminal stenosis.
- **B** = Stretching and engorgement of the septal, caudate, and thalamostriate veins.
- **C** = Stretching of the corpus callosum, fornix and anterior commissure;
- **C^1** = direct mass effect on the septal nuclei and nucleus accumbens;
- **D** = direct mass effect within the nuclei of the anterior hypothalamus and the optic chiasm.
A 54-year-old-man, presented with recent severe positional headache, emesis, transitional loss of consciousness.

Magnetic Resonance Imaging (MRI) revealed stenosis of bilateral foramen of Monro due to an expanding cyst of septum pellucidum (CSP).
Case Report

Post-operative CT

1st Day

3rd Month
Endoscopic fenestration of symptomatic septum pellucidum cysts produces immediate relief of the mass effect of the cyst and resolution of associated symptoms.

Cannulation of the lateral ventricle before cyst fenestration prevents inadvertent injury to the fornices, thalamus, internal capsule, caudate nucleus, and septal and thalamostriate veins.