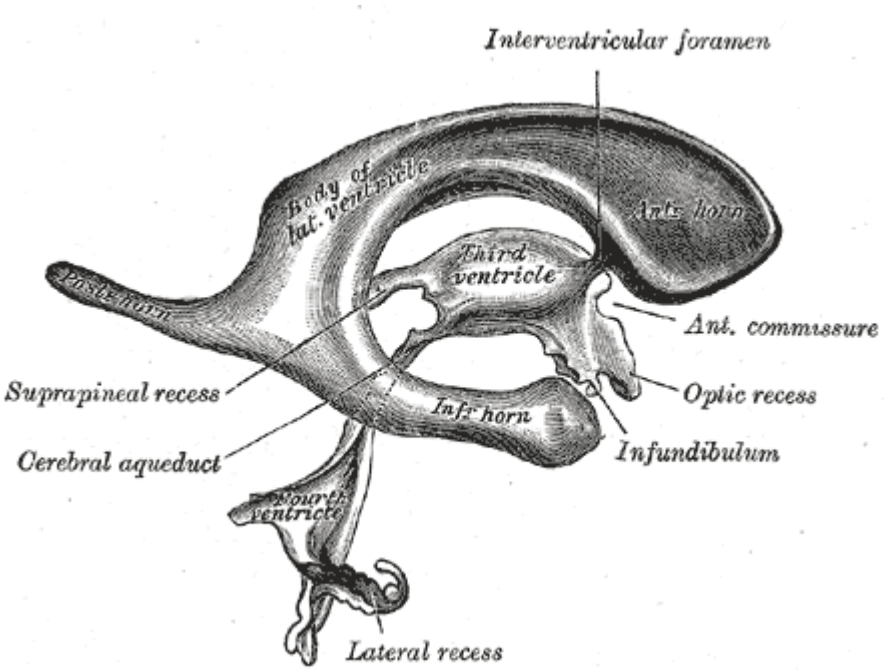
Pituitary stalk

The pituitary stalk (also known as the infundibular stalk or simply the infundibulum), is the connection between the hypothalamus and the posterior pituitary.

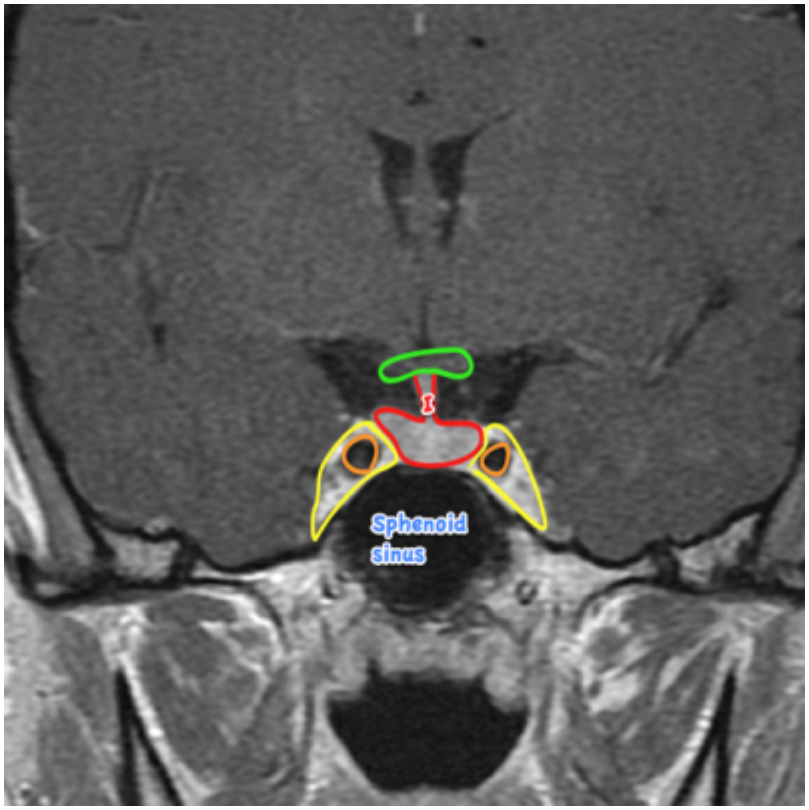


The floor of the third ventricle is prolonged downward as a funnel-shaped recess, the infundibular recess, into the infundibulum, and to the apex of the latter the hypophysis or pituitary is attached.

It passes through the dura mater of the diaphragma sellae as it carries axons from the magnocellular neurosecretory cells of the hypothalamus down to the posterior pituitary where they release their neurohypophysial hormones, oxytocin and vasopressin, into the blood.

This connection is called the hypothalamo-hypophyseal tract or hypothalamo-neurohypophyseal tract.

MRI



Craniopharyngiomas frequently grow from remnants of the Rathke pouch, which is located on the cisternal surface of the hypothalamic region. These lesions can also extend elsewhere in the infundibulohypophyseal axis.

These tumors can also grow from the infundibulum or tuber cinereum on the floor of the third ventricle, developing exclusively into the third ventricle.

Radiosurgery

Treating pituitary neuroendocrine tumors in the infundibulum with stereotactic radiosurgery (SRS), achieving tumor volume control while preserving pituitary endocrine function and visual function, is challenging.

Sokolowski et al., present a case of a recurrent remnant infundibular lesion treated with Gamma knife radiosurgery (GKS). The mass was treated with microsurgical resection twice, and the residual stalk lesion was treated with single-session SRS employing a margin dose of 15 Gy to the infundibulum. Five years after GKS, tumor regression persists without visual impairment or hypopituitarism. Radiosurgical doses of 30 Gy to the pituitary stalk may be tolerated by patients while maintaining endocrine function [1].

1)
Sokolowski JD, Cohen-Inbar O, Sheehan JP. Radiosurgery for infundibulum adenoma: stalk dose implications. Acta Neurochir (Wien). 2016 Sep;158(9):1697-700. doi: 10.1007/s00701-016-2894-1. Epub 2016 Jul 19. PubMed PMID: 27435739.