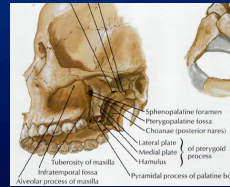




Pterygopalatine fossa and its connections

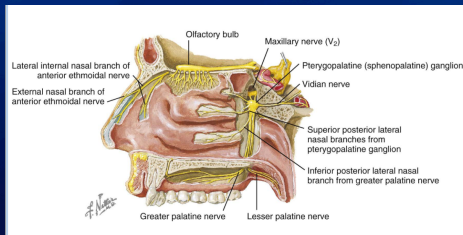
David R. DeLone, MD

Where is it?

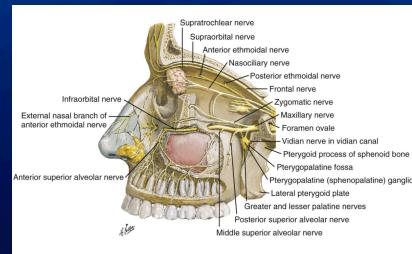


- Deep to the infratemporal fossa
- Anterior to the pterygoid process
- Behind the posterior wall of the maxillary sinus (perpendicular plate of the palatine bone)

What's in it?



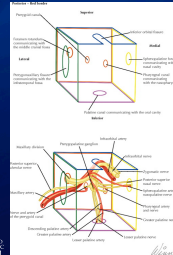
What's in it?



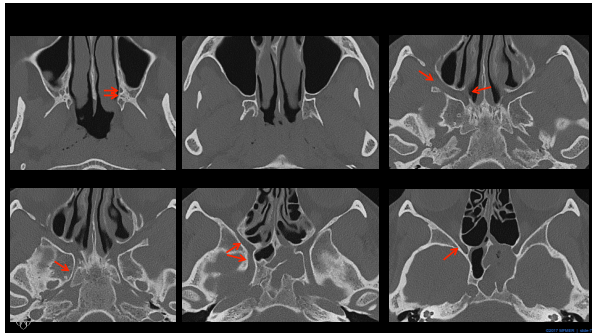
Autonomic function

- Parasympathetic
 - Parasympathetic preganglionic fibers coming along Vidian nerve (GSPN) synapse at **pterygopalatine ganglion**.
 - Postganglionic fibers pass along the pterygopalatine nerves, to maxillary nerve, zygomatic nerve (inferior orbital fissure), and then along zygomaticotemporal nerve. The fibers then communicate with the lacrimal branch of the ophthalmic nerve.
 - Supplies the lacrimal gland and mucosa of nasopharynx and nasal cavity.
- Sympathetic
 - Postganglionic fibers arising from **superior cervical ganglion** pass along the carotid plexus, become deep petrosal nerve, which joins the GSPN to form the Vidian nerve.
 - Sympathetic fibers pass through pterygopalatine ganglion without synapse and then distribute analogously to the parasympathetic fibers.

What goes in and out of it?



- Posterior
 - Foramen rotundum
 - Vidian canal
 - Palatovaginal (pharyngeal) canal
 - Vomerovaginal (basipharyngeal) canal
- Medial
 - Sphenopalatine foramen
- Lateral
 - Pterygomaxillary fissure
- Anterosuperior
 - Inferior orbital fissure
- Inferior
 - Greater and lesser palatine foramina



What goes in and out of it?

- **Posterior**
 - Foramen rotundum (Meckel's cave)
 - Maxillary nerve (V₂)
 - Artery of foramen rotundum
 - Emissary veins
 - Vidian canal (foramen lacerum)
 - Vidian nerve and Vidian artery
 - Greater superficial petrosal nerve
 - Deep petrosal nerve
 - Palatovaginal (pharyngeal) canal
 - Pterygovaginal artery
 - Pharyngeal nerve to Eustachian tube
 - Vomerovaginal (basipharyngeal) canal
 - Branch of the sphenopalatine artery

Tubbs Neurosurgery 2006
Rumboldt AJR 2006
Meng Int J Clin Exp Med 2015

Vidius Vidius (Gasko Guidi) circa 1547.

What goes in and out of it?

- **Medial**
 - Sphenopalatine foramen (nasal cavity)
 - Sphenopalatine artery
 - Nasopalatine nerve
 - Posterior superior nasal nerve

What goes in and out of it?

- **Lateral**
 - Pterygomaxillary fissure (masticator space)
 - Maxillary artery
 - Posterior superior alveolar nerve

What goes in and out of it?

- **Anterosuperior**
 - Inferior orbital fissure (orbit)
 - Infraorbital nerve
 - Zygomatic nerve
 - Small branches from the pterygopalatine ganglion
 - Infraorbital artery

What goes in and out of it?

- **Inferior**
 - Greater and lesser palatine foramina (palate)
 - Greater and lesser palatine nerves
 - Greater runs along hard palate to incisor teeth, gingiva, and mucosa.
 - Lesser supplies the soft palate, uvula, and tonsil.
 - Greater and lesser palatine arteries

