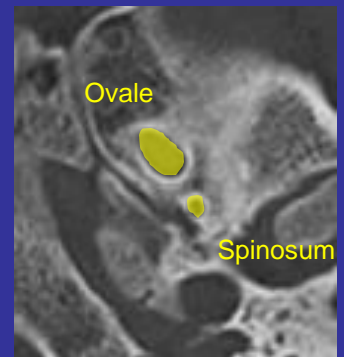
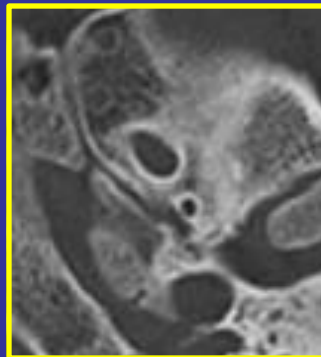
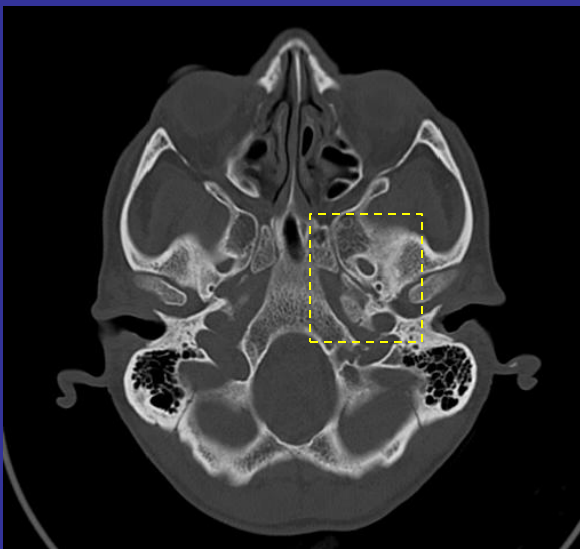


Skull Base Anatomy

OVERVIEW

Foramen	Contents
Foramen Ovale	CN V3 & (Acc. Meningeal Art.)
Foramen Spinosum	Middle Meningeal Artery
Foramen Rotundum	CN V2
Vidian Canal	Vidian Nerve, Vidian Artery & Vein
Superior Orbital Fissure	CN 3, CN 4, CN V1, CN 6
Inferior Orbital Fissure	CN V2
Optic Canal	CN 2, Ophthalmic Artery
Jugular Foramen	Jugular Vein & CN 9, 10, 11
Hypoglossal Canal	CN 12

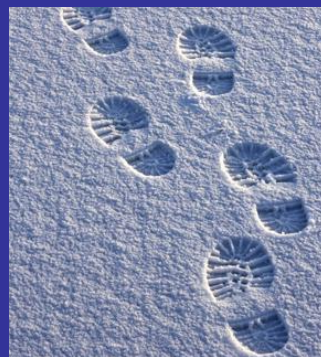


F. Ovale & F. Spinosum

Foramen OVALE... oValE... oValE ... contains V3.

Ovale also contains accessory meningeal artery (less important to know.)

Foramen SPINOSUM... contains middle meningeal artery.

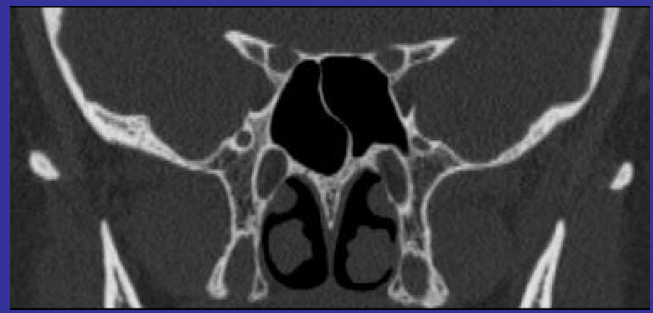


Oval part of the shoe

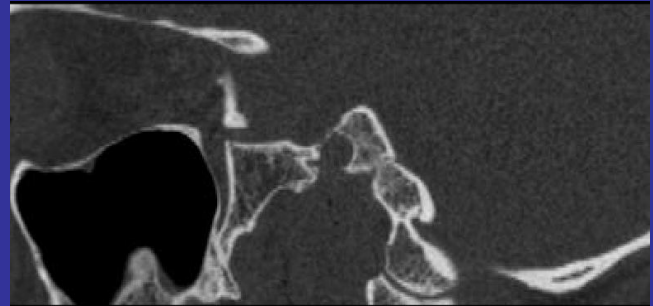


Spine of the shoe

Think of the impression a high-heel shoe would leave in a bank of snow.



CORONAL

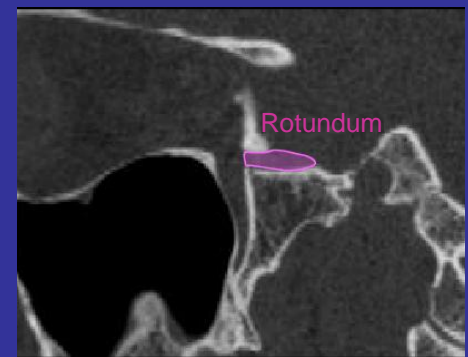
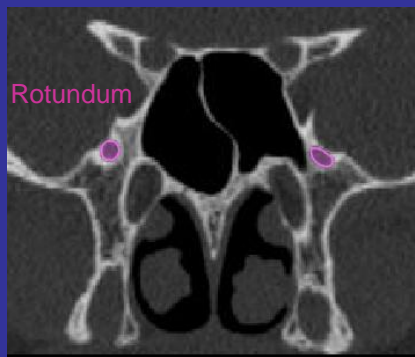
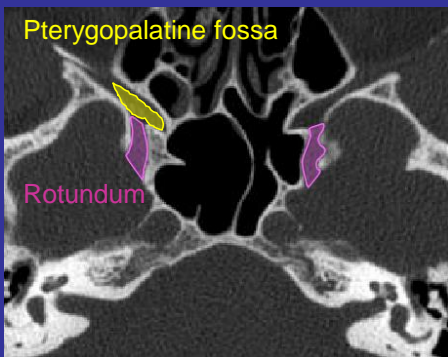


SAGITTAL

Foramen Rotundum... contains V2
Think R2D2 (Rotundum, V2)



Beep-boop
boo beep!



Axial: Runs anterior to posterior, right up to pterygopalatine fossa

Coronal: **ROUND**, on-end staring at you, like looking down the barrel of a gun

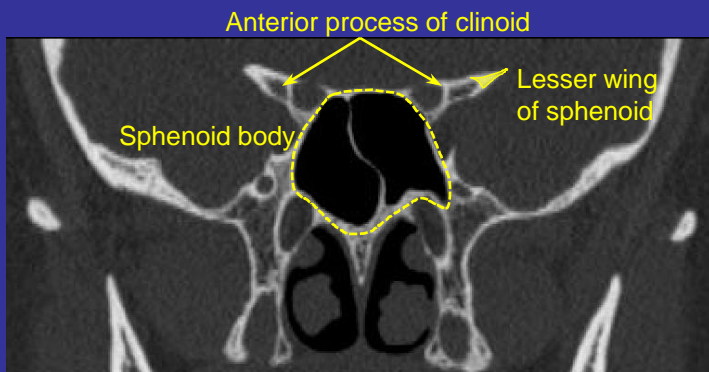
Sagittal: **FLAT**, "level" / horizontal canal



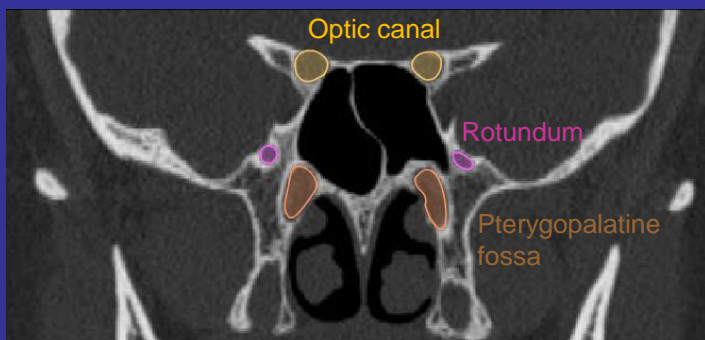
Oh, **THINK** you found foramen rotundum? ... Ask yourself one question: "Do I feel lucky?" Well, do ya, punk?

As it turns out, there's a lot of guns in the skull base...

☺ and all of them want to point at you ☺



OKAY, this is the level where everything looks like a round or oval circle pointing at you. You can tell which is which by looking at WHERE it is in the grand scheme of things. As a reference LET IT BE KNOWN, at THIS level, the anterior process of the clinoid is more-or-less contiguous with the sphenoid body. Compare that to the more sneaky, trickster coronal plane where the VILLAIN, the VIDIAN canal, lives.

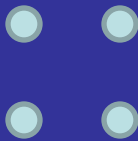


Optic canal sits high above, and SEES all, from its lofty throne where it is perched and supervises the other little holes in your coronal plane.

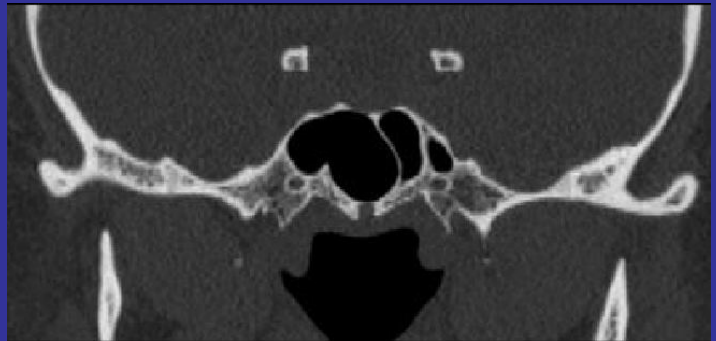
Rotundum is the round circle that is more lateral here. It is FLAT on sagittal plane (see prior page).

Pterygopalatine fossa is the closest to the paranasal sinuses on this plane.

In THIS plane, the anterior process of the clinoid is no longer contiguous and seems to float magically in the air.



VIDIAN resides in the barrels of the gun pointing at you in THIS plane, **MEDIALY**.



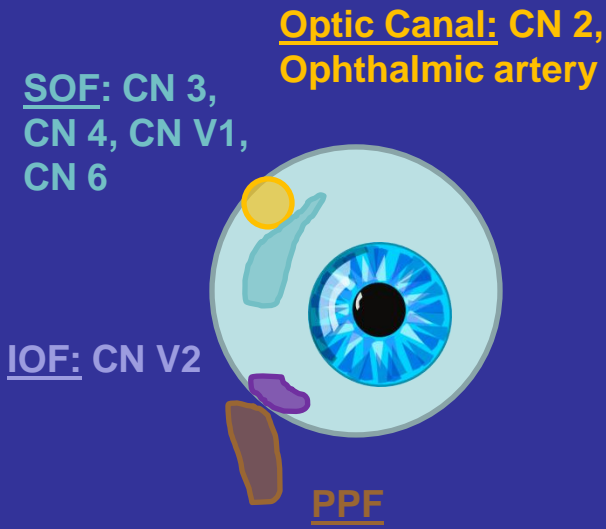
Vidian Canal: Contains the Vidian artery and Vidian nerve (surprise!)

What is this "Vidian Nerve"??

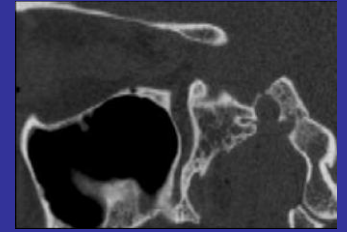
Derived from the union of the greater superficial petrosal nerve (off geniculate ganglion of CN 7) and deep petrosal nerve (off sympathetic chain of ICA). Provides secretomotor function for lacrimal gland, nose and palate.



Let's review the confusing relationship between optic canal, superior orbital fissure (SOF), inferior orbital fissure (IOF), and pterygopalatine fossa (PPF)



CORONAL



SAGITTAL

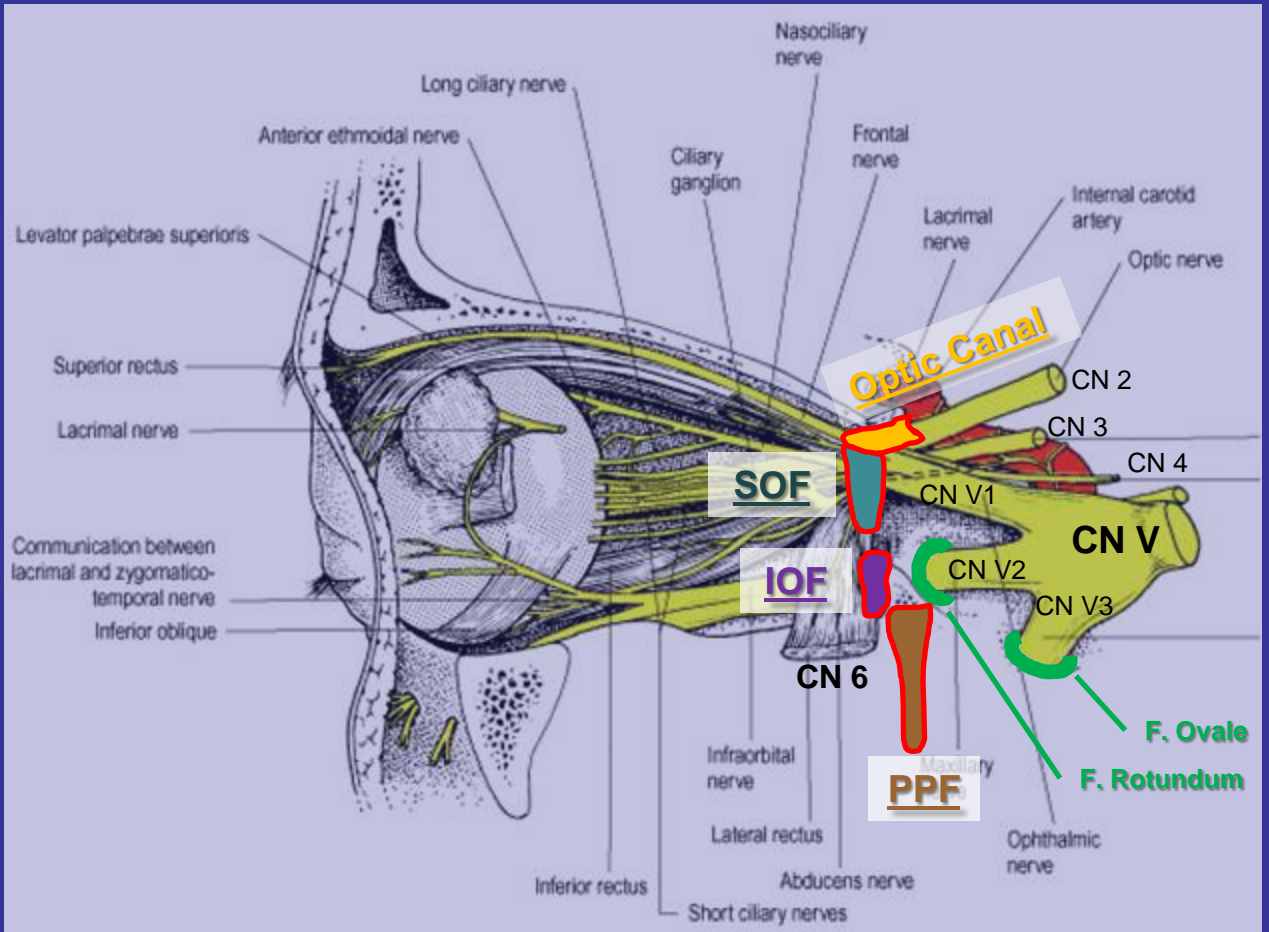
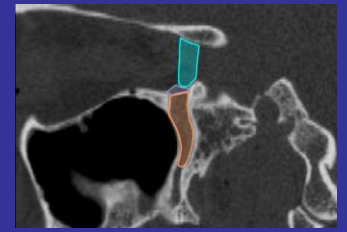
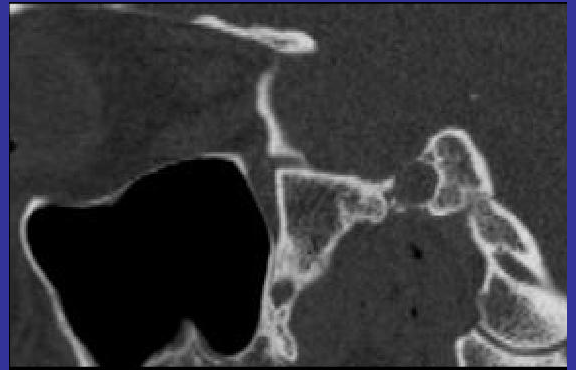
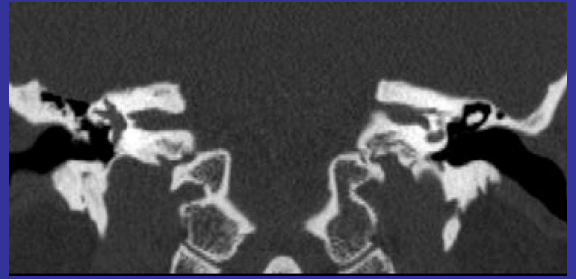
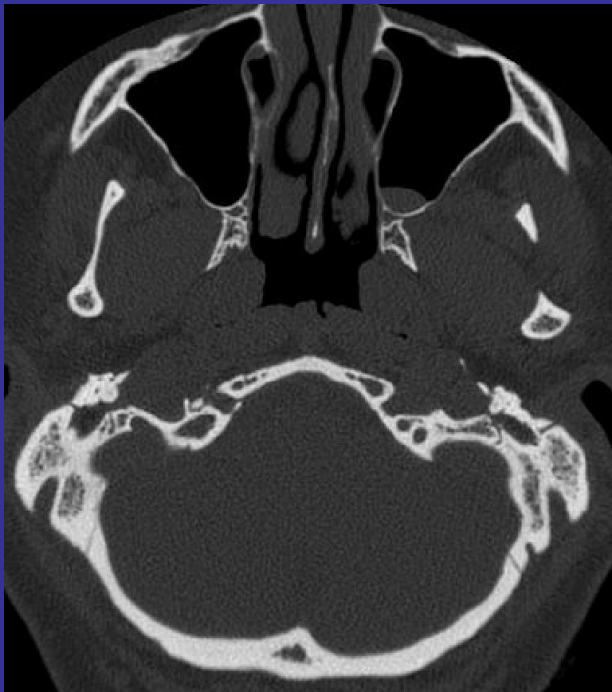
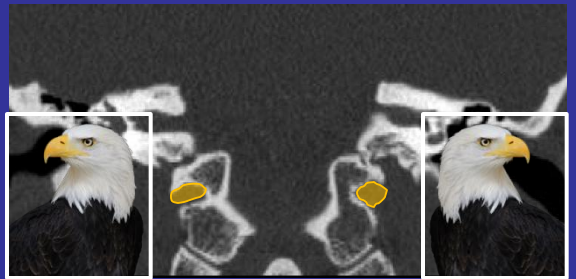
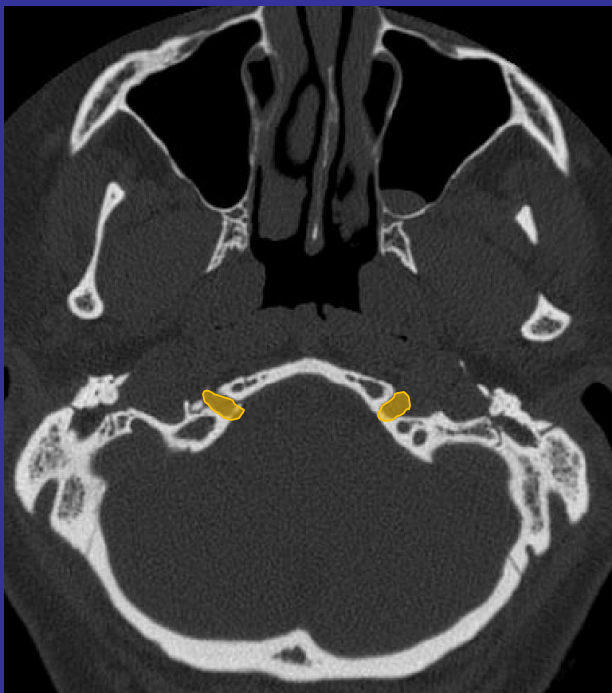


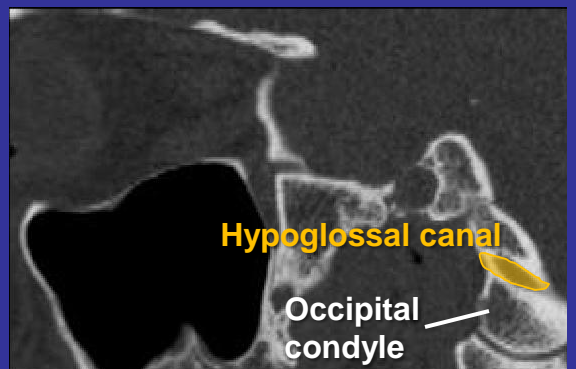
Figure 1. awesome: I'm sure you're reviewing this magnificent piece of magnificence, which took me a solid 25 to 30 minutes to make. That's like, an entire episode of Family Guy for me. You're welcome.



Hypoglossal Canal contains the Hypoglossal Nerve (CN 12). The hypoglossal canal is very posterior and inferior, making it unique as a skull base foramen. Remember that CN 12 is the last of the 12 cranial nerves to erupt.

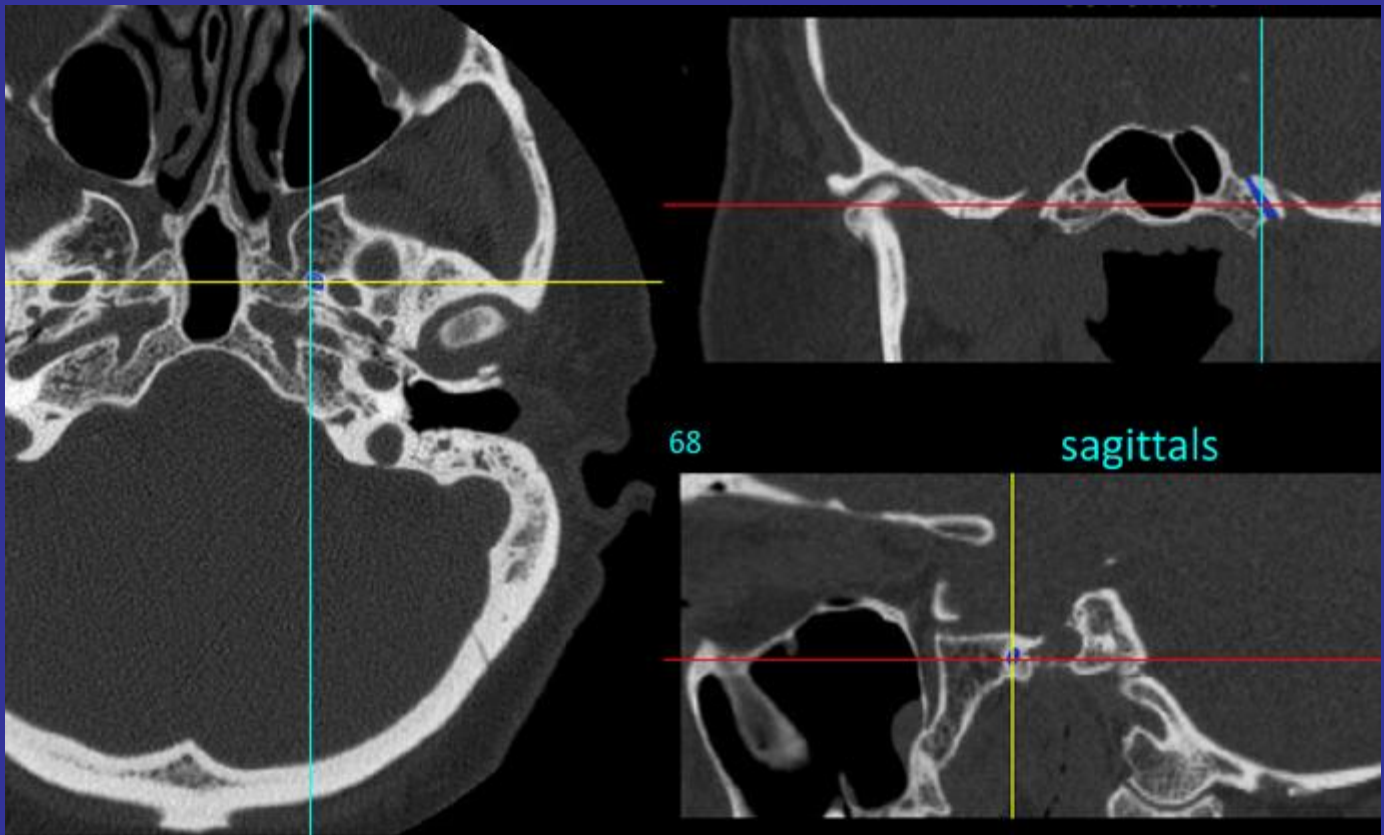


“The Guardian Eagles” coronal level. **Hypoglossal canal** is tucked under the mighty eagles’ beak.



Hypoglossal canal is very posterior and inferior in skull base.

EXTRA-CREDIT / BONUS POINTS

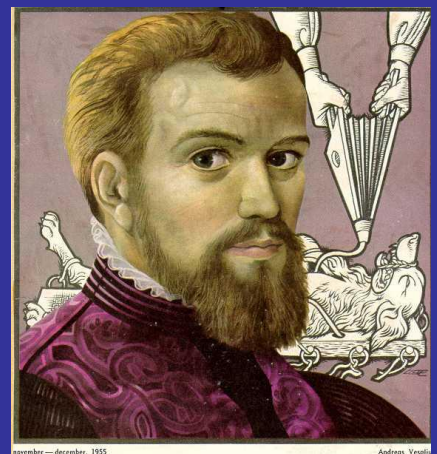


Foramen Vesalius aka the Sphenoidal Emissary Foramen

MEDIAL to foramen ovale, small aperture which is variably present, first discovered by the great Vesalius. So who cares???

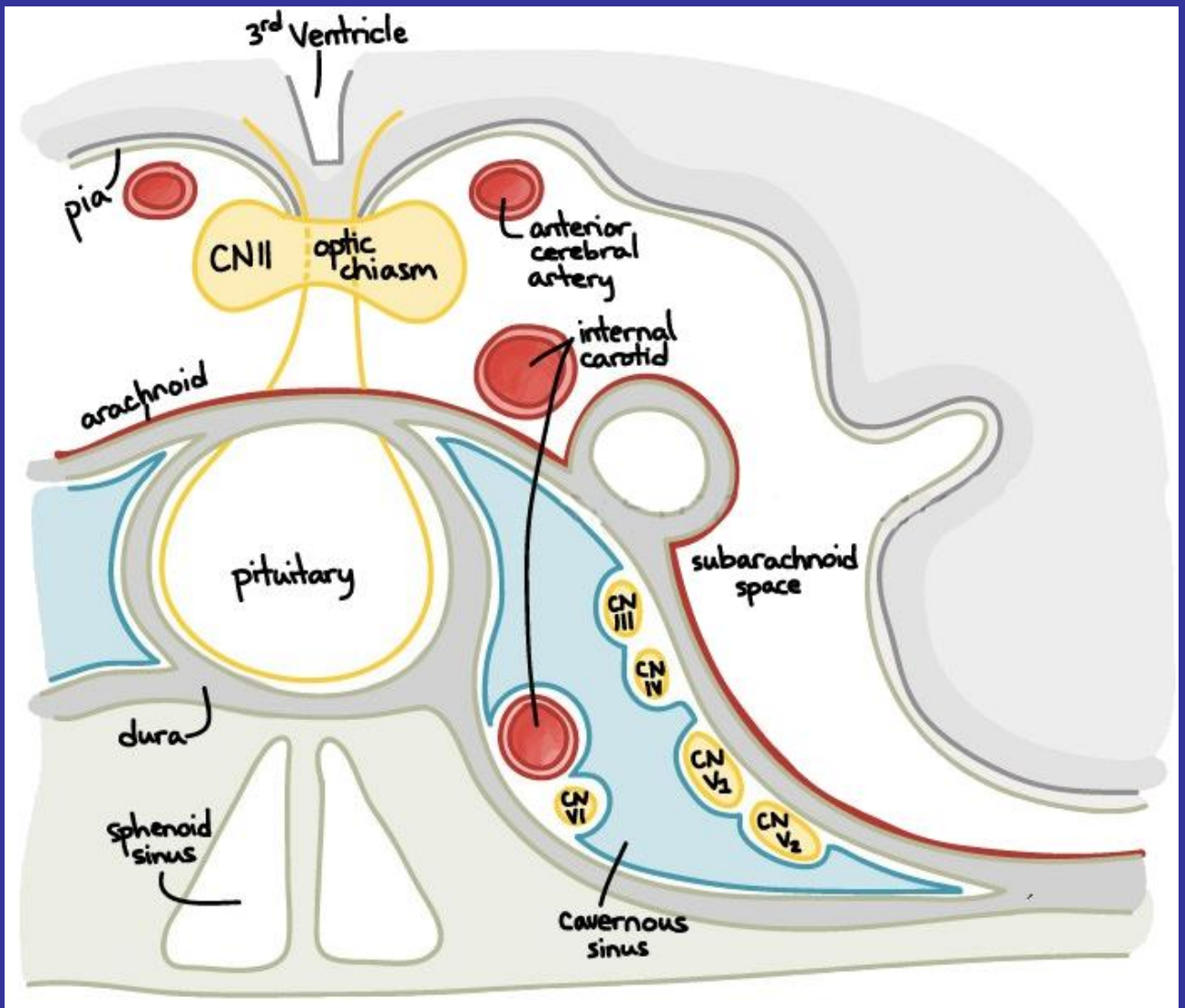
Significance #1: Gives passage to the vein of Vesalius that connects the pterygoid plexus with the cavernous sinus. This allows a communication → **INFECTED THROMBUS** from extracranial source can reach the cavernous sinus!

Significance #2: If present, these foramina are **ALMOST ALWAYS** symmetric. If they are not symmetric, it can herald an abnormality such as invasion by nasopharyngeal carcinoma, angiofibroma, CCF with drainage through the emissary vein, and neurofibromatosis.



GREETINGS! My name is Vesalius. Behold my magnificent beard!

EXTRA-CREDIT / BONUS POINTS



Cavernous Sinus

If anyone is going to ask you a question about this, it'll be "what's in the cavernous sinus?". **The answer is CN 3, CN 4, CN V1, CN V2, CN 6**, and the **carotid artery**.

Remember that CN 2 and CN V3 do NOT run through it.

Also, notice how CN 6 runs right next to the carotid, whereas the rest of the nerves run laterally next to the wall of the sinus. This is why you can get **lateral rectus palsy earlier with cavernous sinus pathologies.**

