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What are the typical nerve and arterial contents of the foramen ovale?

Trigeminal nerve, mandibular division (V3)

Inferior otic ganglion

Lesser petrosal nerve

Sometimes meningeal branch of mandibular nerve/nervus spinosus (this more commonly passes through the foramen spinosum)

Accessory meningeal artery

If you add the veins, there is a mnemonic of OVALE:

Otic ganglion

V3

Accessory meningeal artery

Lesser petrosal nerve

Emissary veins

What are the typical nerve and arterial contents of the foramen spinosum?

Middle meningeal artery

Meningeal branch of mandibular nerve/nervus spinosus (most of the time)

What are the typical nerve and arterial contents of the foramen rotundum?

Trigeminal nerve, maxillary branch (V2)

Artery of the foramen rotundum

Remember: V2 passes through the foramen rotundum and V3 passes through the foramen ovale. A stupid trick that helps me remember this is "rotwondum" to help me remember Vtwo passes through the foramen of rotundum.

What are the typical nerve, arterial, and venous contents of the superior orbital fissure?

Nerve: trochlear nerve, abducens nerve, oculomotor nerve, as well as the lacrimal, frontal, and nasociliary nerves.

Arterial: none

Veins: superior and inferior ophthalmic vein branches

What are the osseous boundaries of the superior orbital fissure?

Superior: lesser wing of sphenoid

Inferior: greater wing of sphenoid

Medial: sphenoid bone

Lateral: frontal bone

What are the typical nerve, arterial, and venous contents of the inferior orbital fissure?

Nerve: infraorbital nerve, zygomatic nerve, orbital branches of pterygopalatine ganglion

Artery: infraorbital artery

Vein: inferior ophthalmic vein branch(es)

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What are the typical contents of the optic canal?

The ophthalmic artery and optic nerve

True or false? The internal carotid artery passes through the foramen lacerum.

False. The internal carotid artery passes by the superior aspect of the foramen lacerum (which is termed the lacerum segment of the internal carotid artery) but it does not traverse through the foramen lacerum.

What are the typical nerve and arterial contents of the foramen lacerum?

Ascending pharyngeal artery branches and the greater petrosal nerve/deep petrosal nerve which merge and then exit as the nerve of the pterygoid canal.

Through which opening does the internal carotid artery enter the skull base?

Through the carotid canal.

What are the typical contents of the supraorbital foramen?

The appropriately named supraorbital artery, vein, and nerve.

What are the typical contents of the infraorbital foramen?

The appropriately named infraorbital artery, vein, and nerve. Note that the infraorbital nerve then gives off the superior alveolar nerves.

What are the typical nerve and arterial contents of the pterygoid canal?

The Vidian nerve and Vidian artery. Note that the pterygoid canal is also called the Vidian canal.

What are the typical nerve and arterial contents of the stylomastoid foramen?

The facial nerve and the stylomastoid artery.

What are the typical nerve and vascular contents of the jugular foramen?

The glossopharyngeal, vagus, and accessory nerves and portions of the jugular bulb/internal jugular vein.

What are the typical nerve and arterial contents of the internal auditory canal?

The facial nerve, vestibulocochlear nerve, vestibular ganglion, and the labyrinthine artery. Sometimes board exams expect you to know how the nerves are positioned within the internal auditory canal. A mnemonic that can help with this is "Seven Up. Coke Down." Meaning that the facial nerve (7th cranial nerve) is superior, and the cochlear nerve is inferior in the canal.

What are the typical nerve and arterial contents of the foramen magnum?

The medulla oblongata, the accessory nerve spinal root (entering through foramen magnum), the vertebral and anterior and posterior spinal arteries.

How does the hypoglossal nerve exit the cranium?

Through the hypoglossal canal.

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Through which foramina do the V1, V2, and V3 branches of the trigeminal nerve exit the skull?

V1: superior orbital fissure

V2: foramen rotundum

V3: foramen ovale

Summary on cranial nerves and associated foramina:

Cranial Nerve #	Name	Exit from Skull
CN1	Olfactory nerve	Cribriform plate
CN2	Optic nerve	Optic foramen
CN3	Oculomotor nerve	Superior orbital fissure
CN4	Trochlear nerve	Superior orbital fissure
CN5	Trigeminal nerve	V1 (Ophthalmic): Superior orbital fissure V2 (Maxillary): foramen rotundum V3 (Mandibular): foramen ovale
CN6	Abducens nerve	Superior orbital fissure
CN7	Facial nerve	Stylomastoid foramen
CN8	Vestibulocochlear nerve	Internal auditory canal
CN9	Glossopharyngeal nerve	Jugular foramen
CN10	Vagus nerve	Jugular foramen
CN11	Accessory nerve	Jugular foramen (spinal root branches ascent through foramen magnum and then exit jugular foramen)
CN12	Hypoglossal nerve	Hypoglossal canal

Bonus: What is my favorite mnemonic to remember the cranial nerves in order? For fans of a certain book/movie series: On, On, On, They Traveled And Found Voldemort Guarding Very Ancient Horcruxes. I did not create this. It is all over online. This is great for those who know the stories.

What is the Dorello canal?

Canal that allows the abducens nerve to traverse between the pontine cistern and cavernous sinus.

What is the typical clinical significance of the sphenopalatine foramen?

For radiology board exams, consider this as a potential pathway for perineural spread from the nasal cavity/superior nasal meatus to the pterygopalatine fossa.

What are the typical nerve and vascular contents of the sphenopalatine foramen?

Nerves: nasopalatine nerve and posterior superior nasal nerve

Vascular: sphenopalatine artery and sphenopalatine vein.