Sagittal Section of Head with Infratemporal Fossa Dissection

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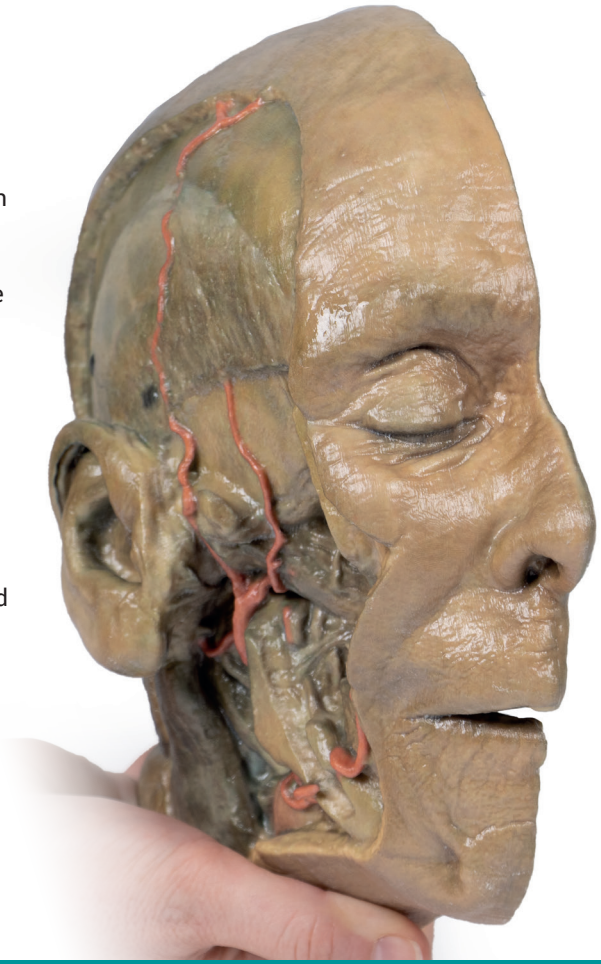
Sagittal Section of Head with Infratemporal Fossa Dissection

This 3D model provides a combined midsagittal section through the head and superior neck coupled with a deep dissection into the infratemporal fossa region and superficial dissection of the scalp.

In the preserved midsagittal section there is preservation of the endocranial contents, the nasal and oral cavities, and the pharynx to the level of the laryngeal cartilages. The nasal cavity is preserved nearly intact, except for a small window excised into the middle nasal concha to expose the ethmoid air cells. A very large sphenoid sinus exists in the individual just superior to the torus of the auditory tube in the nasopharynx. The oral cavity and laryngopharynx are undissected, with the larynx only preserve just distal to the level of the arytenoid cartilages and not including a clear set of vocal folds.

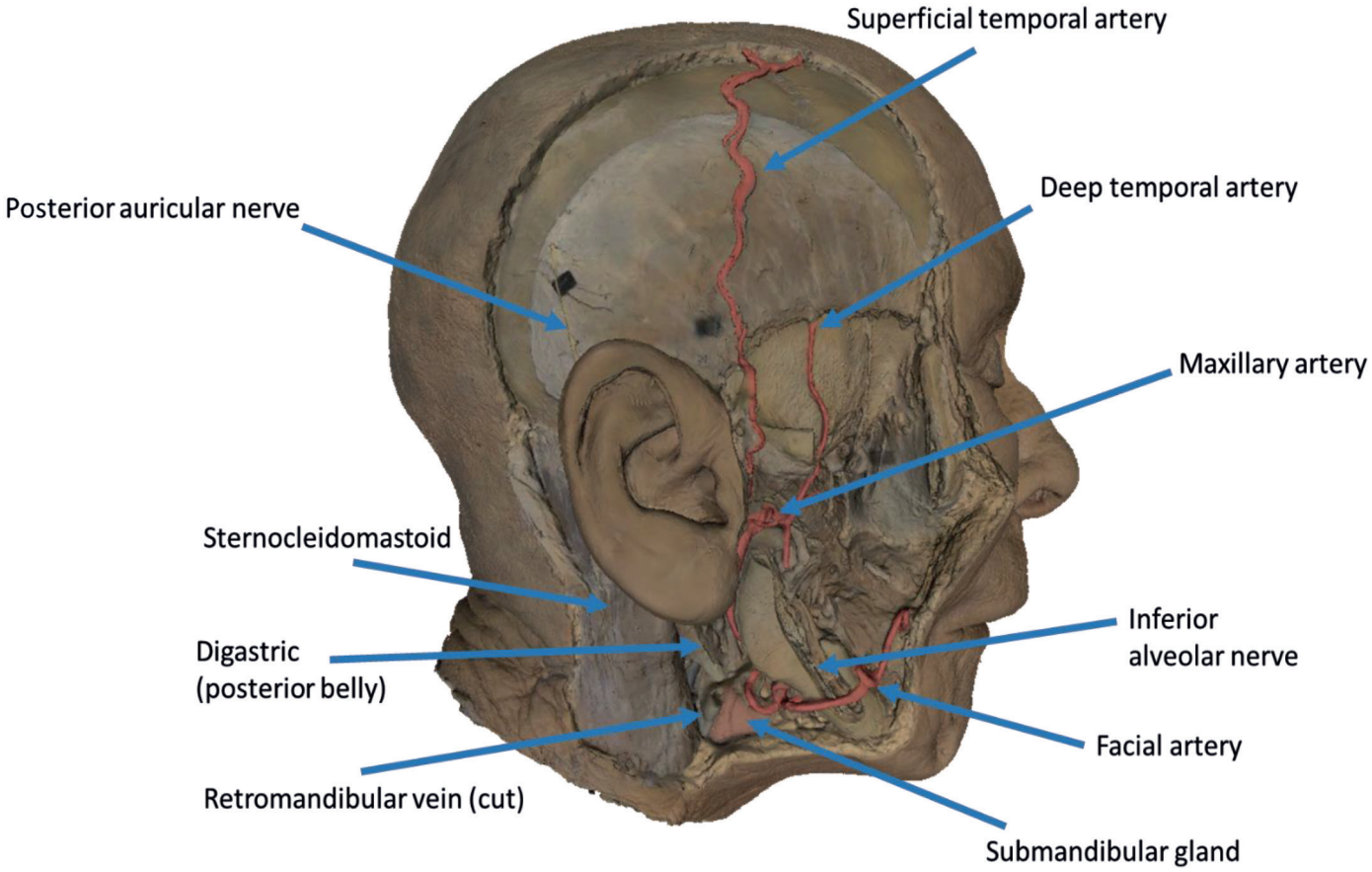
Within the endocranial cavity, the sectioned brain is slightly off the midagittal plane, such that neither the superior sagittal sinus nor the third ventricle are clearly defined - but the lateral ventricle is open and part of the fourth ventricle is preserved between the pons and cerebellum. The gyri and sulci of the cerebrum are not well separated, but the cingulate gyrus and corpus callosum can be separated. Cross-sectioned views of the optic tract, pituitary gland, superior and inferior colliculi, superior cerebellar peduncle, and transition between the medulla oblongata and spinal cord are all visible. The tentorium cerebelli and confluence/transverse sinus is positioned between the cerebellar hemisphere and occipital lobe. Small portions of the posterior inferior cerebellar artery, vertebral arteries, basilar artery, and posterior cerebral and anterior cerebral arteries are visible in section.

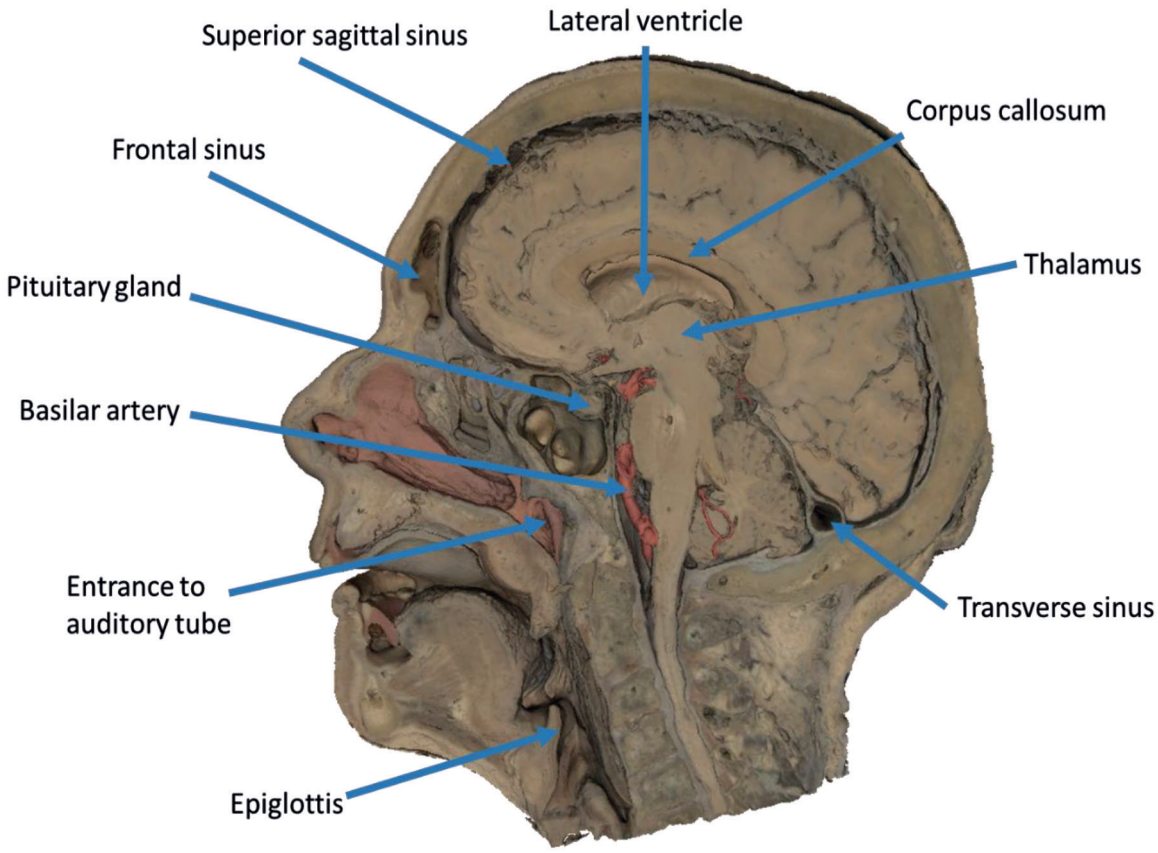
On the opposing side of the model, a superficial and deep dissection has opened a large window into the anatomy of the lateral scalp and infratemporal fossa. Across the scalp there is a well preserved posterior auricular nerve and superficial temporal artery highlighted on the superficial surface of the temporalis muscle. Anteriorly, the temporalis has been dissected to expose the deep temporal arteries arising from across the maxillary artery.



The deep level of dissection has exposed parts of the infratemporal fossa (through partial removal of the mandibular ramus and corpus) and dissection of retromandibular tissues. At the inferior margin of the dissection window, the cut edge of the retromandibular vein lies adjacent to the submandibular gland and the ascending path of the facial artery as it cross towards to angle of the mouth. Just superior to the cut retromandibular vein is the posterior belly of the digastric muscle, overlying a small exposure of the deeper internal jugular vein.

Just posterior to the retained ascending ramus of the mandible are the external carotid artery and the occipital artery (running in parallel prior to passing posteriorly). Tracing the external carotid artery superiorly, the posterior auricular artery, superficial temporal artery, and maxillary artery are all visible. The maxillary artery passes deep to the lateral pterygoid muscle and into the infratemporal fossa, reappearing superior to the lateral pterygoid as it passes into the pterygomaxillary fissure. Along its course, it gives rise to the posterior deep temporal artery, the inferior alveolar artery (which is exposed in the dissected mandibular corpus), the anterior deep temporal artery, and the posterior superior alveolar artery. Finally, the inferior alveolar nerve can be seen coursing within the opened mandibular corpus, and the lingual nerve resting on the medial pterygoid. The buccinator muscle is also retained, with the distal part of the parotid duct preserved as it enters the muscle towards the oral mucosa.





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