Tongue

The tongue appears in embryos of approximately 4 weeks in the form of two **lateral lingual swellings** and one **medial swelling,** calld (**tuberculum impar)** These three swellings **originate from the first pharyngeal arch**. A second median swelling, the **copula,** or **hypobranchial eminence,** is formed by **mesoderm of the second, third, and part of the fourth arch**. Finally, a third median swelling, formed by the **posterior part of the fourth arch**, marks development of the **epiglottis**. Immediately behind this swelling is the **laryngeal orifice,** which is flanked by the **arytenoid swellings .**

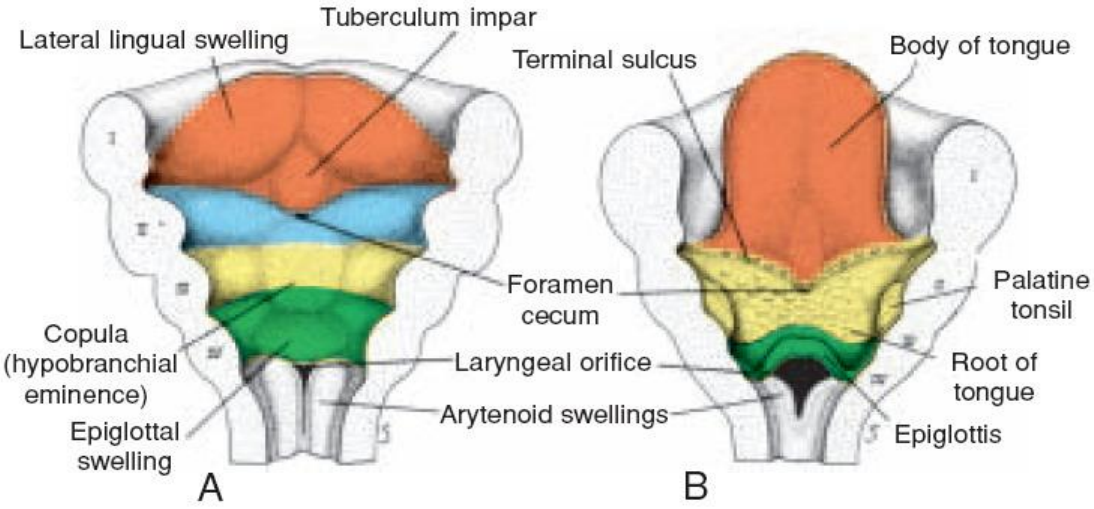
As the lateral lingual swellings increase in size, they overgrow the tuberculum impar and merge, forming the anterior two-thirds, or body, of the tongue .Since the mucosa covering the body of the tongue originates from the first pharyngeal arch, **sensory innervation** to this area is by the **mandibular branch of the trigeminal nerve.** The body of the tongue is separated from the posterior third by a V-shaped groove, the **terminal sulcus .**

The posterior part, or root, of the tongue originates from the second, third, and part of the fourth pharyngeal arch. The fact that **sensory innervation** to this part of the tongue is supplied by the **glossopharyngeal nerve** indicates that tissue of the third arch overgrows that of the second.

The epiglottis and the extreme posterior part of the tongue are innervated by the **superior laryngeal nerve(branch from vagus nerve),** reflecting their development from the fourth arch. Some of the tongue muscles probably differentiate in situ, but most are derived from myoblasts originating in

occipital somites. Thus, **tongue musculature** is innervated by the **hypoglossal nerve.**

The general sensory innervation of the tongue is easy to understand. The body is supplied by the trigeminal nerve, the nerve of the first arch; that of the root is supplied by the glossopharyngeal and vagus nerves, the nerves of the third and fourth arches, respectively. **Special sensory innervation** (**taste**) to the anterior two thirds of the tongue is provided by the **chorda tympani branch of the facial nerve,** while the posterior third is supplied by the glossopharyngeal nerve.



Clinical correlation

Tongue-Tie

In **ankyloglossia** (**tongue-tie**) **the tongue is not freed from the floor of the mouth**. Normally, extensive cell degeneration occurs, and **the frenulum is the only tissue that anchors the tongue to the floor of the mouth**. In the most common form of ankyloglossia, the frenulum extends to the tip of the tongue.

Thyroid Gland

The thyroid gland appears as an **epithelial proliferation in the floor of the pharynx between the tuberculum impar and the copula at a point later indicated by the foramen cecum .**Subsequently the thyroid descends in front of the pharyngeal gut as a blobbed diverticulum .

During this migration, the thyroid remains connected to the tongue by a narrow canal, the **thyroglossal duct. This duct later disappears**.

With further development, the thyroid gland descends in front of the hyoid bone and the laryngeal cartilages. It reaches its final **position in front of the trachea in the seventh week .**

Clinical correlation

Thyroglossal Duct

A **thyroglossal cyst** may lie at any point along the migratory pathway of the thyroid gland but is always near or in the **midline** of the neck. it is a cystic **remnant of the thyroglossal duct**. Sometimes a thyroglossal cyst is connected to the outside by a fistulous canal, called **thyroglossal fistula.**

Figure 15.20 Thyroglossal cyst. These cysts, which are remnants of the thyroglossal duct, may be anywhere along the migration pathway of the thyroid gland. They are commonly found behind the arch of the hyoid bone. An important diagnostic characteristic is their midline location.