

9. The Velum

The palate is generally defined as the roof of the oral cavity and separates the nasal and oral cavities from one another. It is divided into a region with underlying bone called the hard palate and a region made up of connective tissue and muscle called or soft palate, or velum. (The terms 'soft palate' and 'velum' as used by linguists and phoneticians are largely interchangeable. We will continue to use the term 'soft palate,' since the term "velum" is often used to refer to other membranous tissues in the body.) The hard palate comprises about two thirds of the palate; the soft palate makes up the posterior third of the palate. The hard palate is fixed and immovable because it is made of bone; the soft palate is fleshy and moveable because it is made of muscle. The opening between the oropharynx and the nasopharynx is regulated by movement of the soft palate. This action controls the degree of nasality speech sounds. Additionally, the soft palate raises so the food will pass down into the esophagus and not up into the nasal cavity.

Elevation of the soft palate is achieved by the contraction of the tensor palatini and levator palatini muscles. The tensor palatini originates at the scaphoid fossa between the medial and lateral pterygoid plates (on the inside of the skull at the same level as the bottom of the nose) and passes around the hook of the hamulus (part of the medial pterygoid plate) to insert into the soft palate. The tensor palatini tenses and flattens the soft palate by pulling laterally. The levator palatini originates at the temporal bone and the middle of the eustachian tube and inserts into the soft palate lateral to the uvula. Contraction of the levator palatini elevates and retracts the soft palate.

Depression of the soft palate is achieved through the contraction of the palatoglossus and palatopharyngeus muscles. These muscles form the body of the faucal pillars from which the uvula hangs and were observed during the dissection of the tongue.

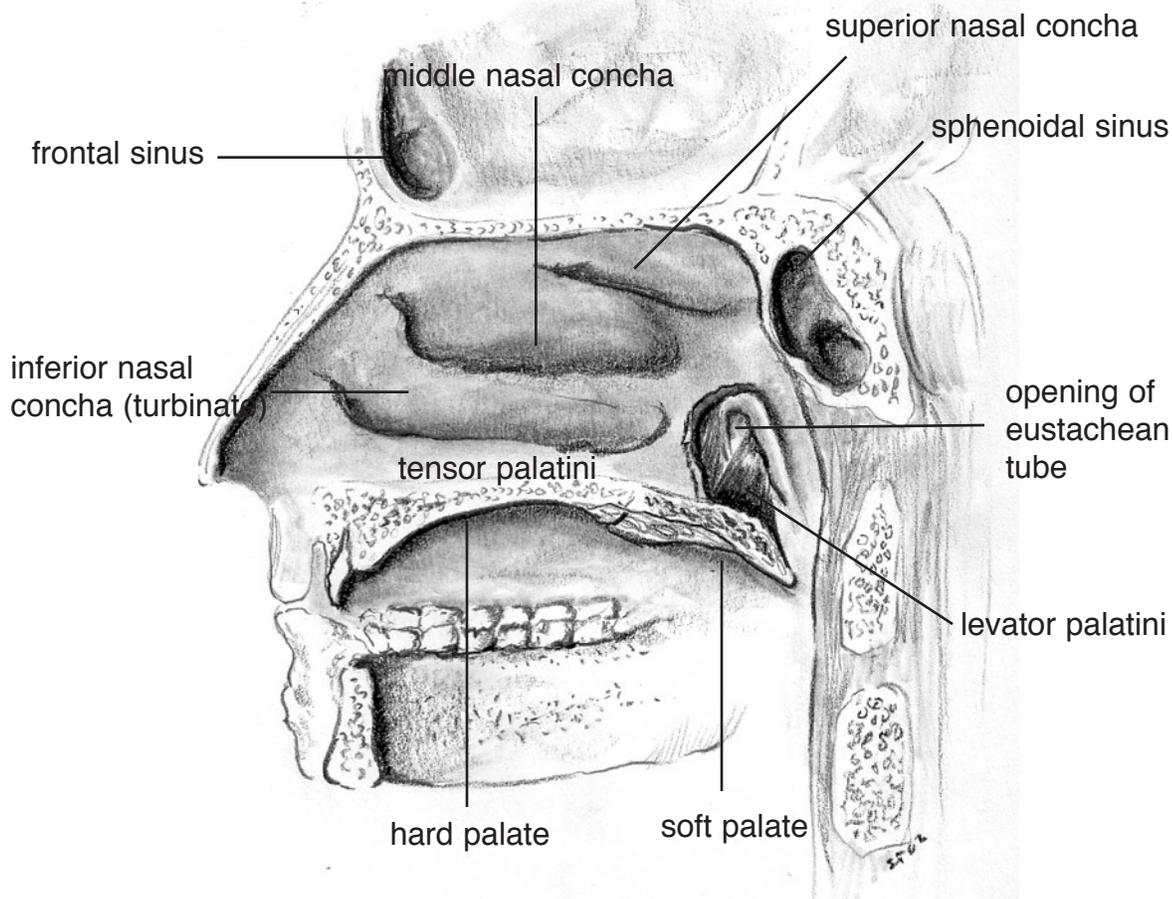
Dissection

Before beginning the dissection, obtain a skull and observe the pterygoid plates. Note that the "wings" of the pterygoid plates may be broken off as they are delicate structures.

1. Locate the uvula and the pillar of fauces from which it hangs. Underneath the mucosa lie the palatoglossus and palatopharyngeus muscles. Remove the mucosa to expose the fibers of these muscles.
2. Bisect the skull sagittally using a bone saw and chisel as necessary.
3. Examine the nasal cavity and nasopharynx. Note how the nasal cavity is perpendicular to the nasal septum (this is why fiberscopes inserted in the nose must be pushed straight back and not up).
4. Remove the nasal septum on the side of the head where it may still be intact.

The lateral wall of the nasal cavity has three bony conchae attached to it, the superior, middle, and inferior. These conchae, or turbinates, are thin bones covered by mucosa which increase the surface area of the nasal cavity.

5. Locate the opening of the tympanopharyngeal (eustachian) tube. This passageway



serves Figure 9.1. Mid-sagittal section of the head.

to interconnect the middle ear cavity to the nasopharynx. (This is why yawning relieves pressure in your ears.)

6. Remove with a scalpel the mucosa around the opening of the eustachian tube.
7. Find the levator palatini muscle beneath the mucosa. This muscle originates from the petrous bone (which is part of the medial and lateral pterygoid plates) and part of the eustachian tube and inserts into the soft palate.
8. Locate the medial pterygoid plate behind the nasal passage. Remove the mucosa covering the medial pterygoid plate.
9. Locate the tensor palatini muscle directly lateral to the medial pterygoid plate.
10. Fracture the medial pterygoid plate with a small chisel, (try not to break the hamulus of the medial pterygoid plate) and remove the pieces. The tendinous fibers of the tensor palatini should now be seen.
11. Isolate the muscle fibers of the tensor palatini in as best you can. Note that the fibers of the tensor palatini which insert into the soft palate split into two separate groups of fibers.