

Chapter 3 . Vascularity: Arterial Supply

- The vascular supply and lymphatics of the nose are found superficial to the musculature. Dissection during rhinoplasty in the proper areolar tissue plane below the muscles preserves blood supply to the periphery and minimizes postoperative ecchymosis and swelling.
- Externally, the anterior ethmoidal artery and the superior labial artery, as well as nasal branches from the infraorbital artery and the angular branch of the facial artery provide vascularity to the nose (Figure 3-1). The infraorbital branch of the internal maxillary artery and the ophthalmic branches of the internal carotid system supply the more dorsal regions.
- The lateral nasal artery is a branch of the angular artery and is considered the most important contributor to the cutaneous blood supply of the nasal tip. This artery is located 2 mm to 3 mm above the alar groove. If an alar base excision is to be performed in an open rhinoplasty, it is important to make sure the incision does not extend beyond the alar groove.¹
- Internally, the vascular supply of the medial and lateral walls of the nasal cavity (Figures 3-2 and 3-3) arises from several arterial systems:
 - The anterior ethmoidal artery arises from the ophthalmic artery of the internal carotid system and divides into medial (septal) and lateral branches to supply the nasal cavity. Along with the posterior ethmoidal artery, it supplies predominantly the superior portions of the lateral vestibule.
 - Similarly, the posterior ethmoidal artery arises from the ophthalmic artery of the internal carotid system and divides into the medial (septal) and lateral posterior nasal arteries.
 - The sphenopalatine artery arises from the maxillary artery of the external carotid and also divides into medial (septal) and lateral branches. It supplies predominantly the posterior and inferior portions of the septum and lateral vestibule, respectively.
 - The greater palatine artery arises from the maxillary artery of the external carotid. It travels to the anterior lower part of the nasal septum via the incisive foramen of the hard palate.
 - The superior labial artery arises from the facial artery of the external carotid system. It supplies predominantly the anterior portions of the vestibule.² All five arterial systems that supply the septum meet in a watershed area, in the anterior portion of the septum called “Kiesselbach plexus.”
- A submucosal plexus deep to the nasal mucosa drains into the sphenopalatine, facial, and ophthalmic veins, providing venous drainage from the internal portions of the nose. Externally, the blood drains to the facial vein via its angular and lateral nasal tributaries.
- The venous plexus serves an important role in the body’s regulation of heat. Air is warmed as it enters the nose and heat is exchanged to the environment.
- One important note is that the veins in the nose communicate with the cavernous sinus of the central nervous system via valveless conduits. Thus, there is the potential for nasal infection to ascend to the brain and meninges.
- Lymphatics in the nose drain the superficial mucosa posteriorly to lymph nodes in the retropharynx and anteriorly to the submandibular or deep cervical nodes in the neck.

REFERENCES

1. Bafaqeeh SA, Al-Qattan MM. Simultaneous open rhinoplasty and alar base excision: Is there a problem with the blood supply of the nasal tip and columellar skin? *Plast Reconstr Surg.* 2000;105:344.
2. Hollinshead W, Rosse C. *Textbook of Anatomy.* 4th ed. Philadelphia, PA: Harper and Row; 1985:980–981.

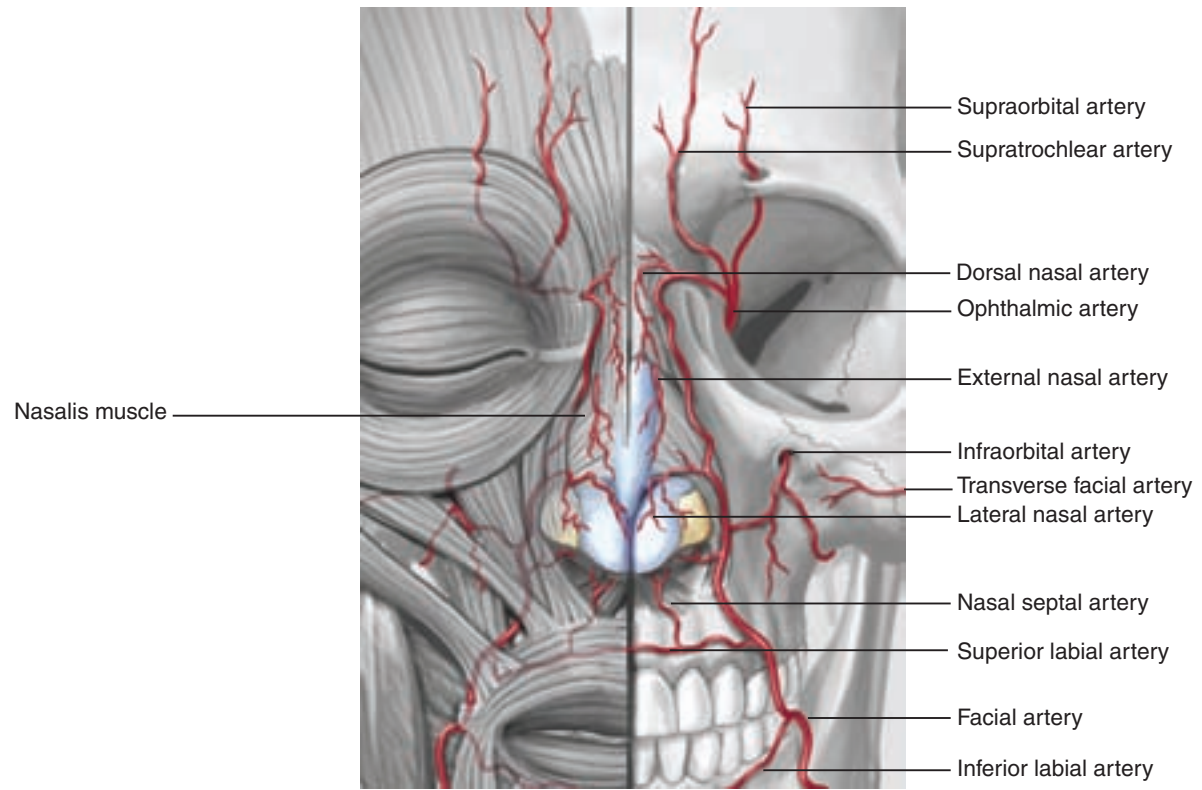


Figure 3-1. Vascular artery of the nose.

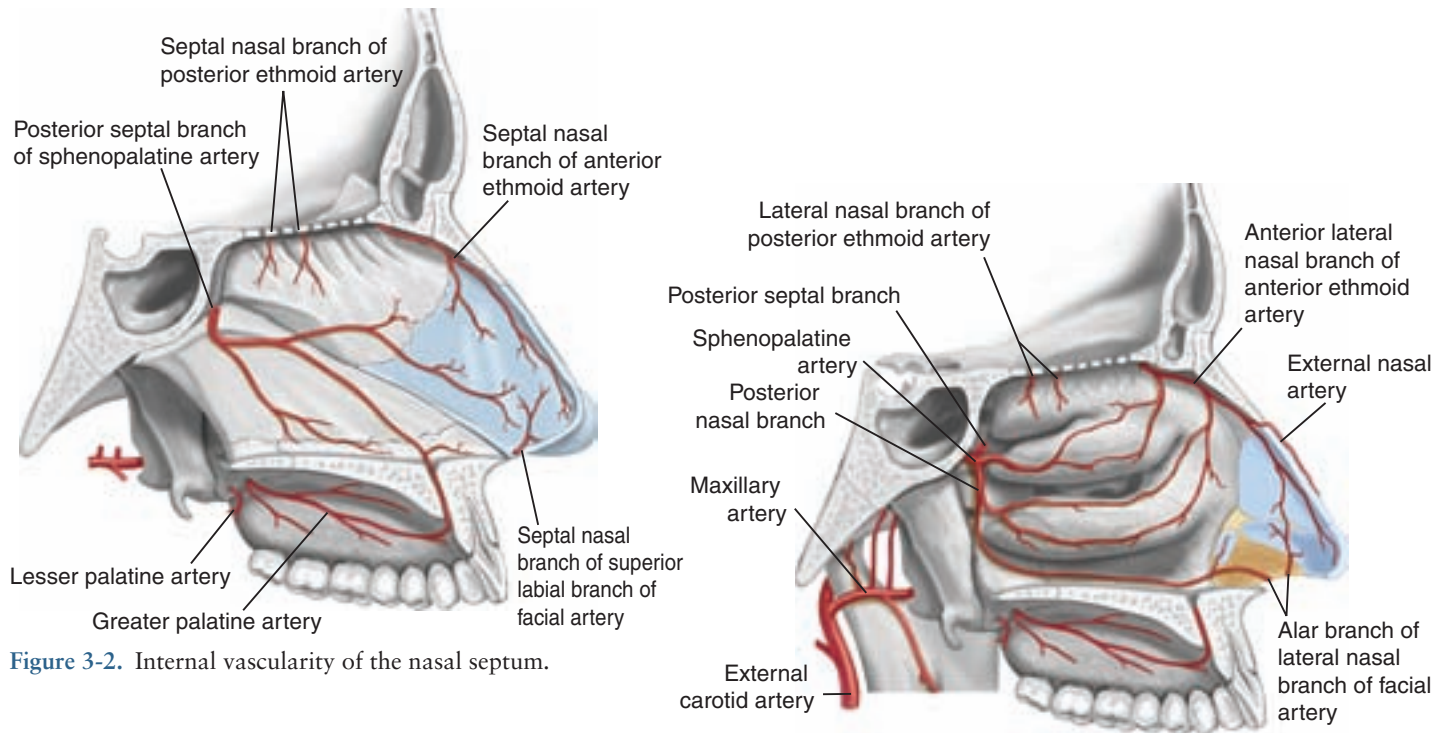


Figure 3-2. Internal vascularity of the nasal septum.

Figure 3-3. Vascularity to the conchal system.