Applied Surgical Anatomy of the Face – Advanced Guide for Surgical Residents

# 1. Layered Anatomy (e.g., Midface/Cheek Region)

1. Skin – Rich in sebaceous glands, especially in T-zone; varies by region and age.

2. Subcutaneous Tissue – Contains superficial fat compartments important for facial contours.

3. SMAS – Fibromuscular layer manipulated in facelift surgery; facial nerve runs deep to this.

4. Mimetic Muscles – Essential for dynamic expression and flap design.

5. Deep Fat Compartments – Important for volumetric reconstruction.

6. Fascia and Periosteum – Entry for deep plane facelifts or subperiosteal dissection.

# 2. Facial Nerve (CN VII)

Branches: Temporal, Zygomatic, Buccal, Marginal Mandibular, Cervical.

Course: Exits stylomastoid foramen, enters parotid gland, branches within.

Surgical relevance: Temporal and marginal mandibular branches are vulnerable; identify trunk at Erb’s point in parotidectomy.

# 3. Sensory Innervation (Trigeminal Nerve – CN V)

V1 (Ophthalmic): Forehead and upper eyelid.

V2 (Maxillary): Midface and upper lip.

V3 (Mandibular): Lower face and jaw.

Blocks: Supraorbital, infraorbital, and mental nerve blocks used in facial surgeries.

# 4. Vascular Anatomy

Arterial supply: Facial artery, transverse facial artery, ophthalmic artery.

Venous drainage: Facial vein connects to cavernous sinus—clinical danger in infections of midface.

# 5. Lymphatic Drainage

Superficial nodes: Preauricular, submandibular, submental.

Deep cervical nodes: Final drainage point—important in oncology and infection spread.

# 6. Aesthetic Subunits of the Face

Forehead, eyebrows, eyelids, nose, cheeks, lips, chin.

Subunit-based reconstruction yields better cosmetic outcomes.

# 7. Danger Zones in Facial Surgery

Temporal region: Temporal branch of CN VII (brow lifts).

Mandibular margin: Marginal mandibular branch (submandibular surgery).

Midface: Infraorbital nerve (maxillary trauma).

Parotid region: CN VII trunk and duct (parotidectomy).

Nose and upper lip: Facial vein connections (risk of cavernous sinus thrombosis).

# 8. Key Surgical Considerations

Facelifts: Elevate deep to SMAS, preserve nerve branches.

Parotidectomy: Use anatomical landmarks (tragal pointer, digastric muscle) to find CN VII.

Trauma repair: Respect RSTLs and aesthetic units.

Flap design: Preserve neurovascular supply and match donor to defect aesthetically.