SURGICAL COMPLICATIONS

INTRAOPERATIVE

AND

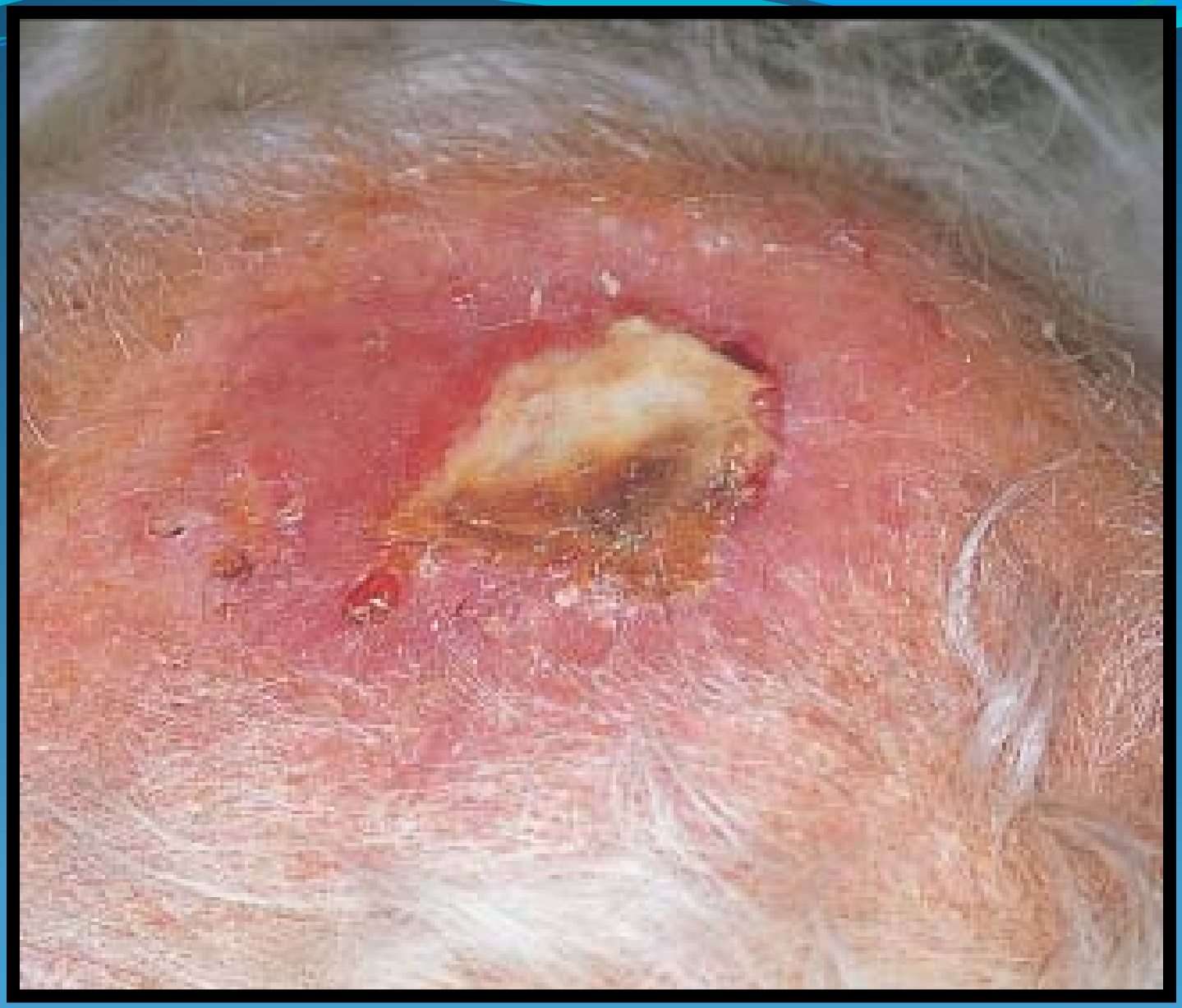
POSTOPERATIVE

INTRAOPERATIVE COMPLICATIONS

- **OBJECTIVES**
  - Complications and avoidance of Contamination
  - Complications and avoidance of Bleeding
  - Complications and avoidance of Tissue injury
  - Complications and avoidance of Excessive Tension
  - Complications and avoidance of Necrosis
  - Complications and avoidance of Nerve deficits

CONTAMINATION

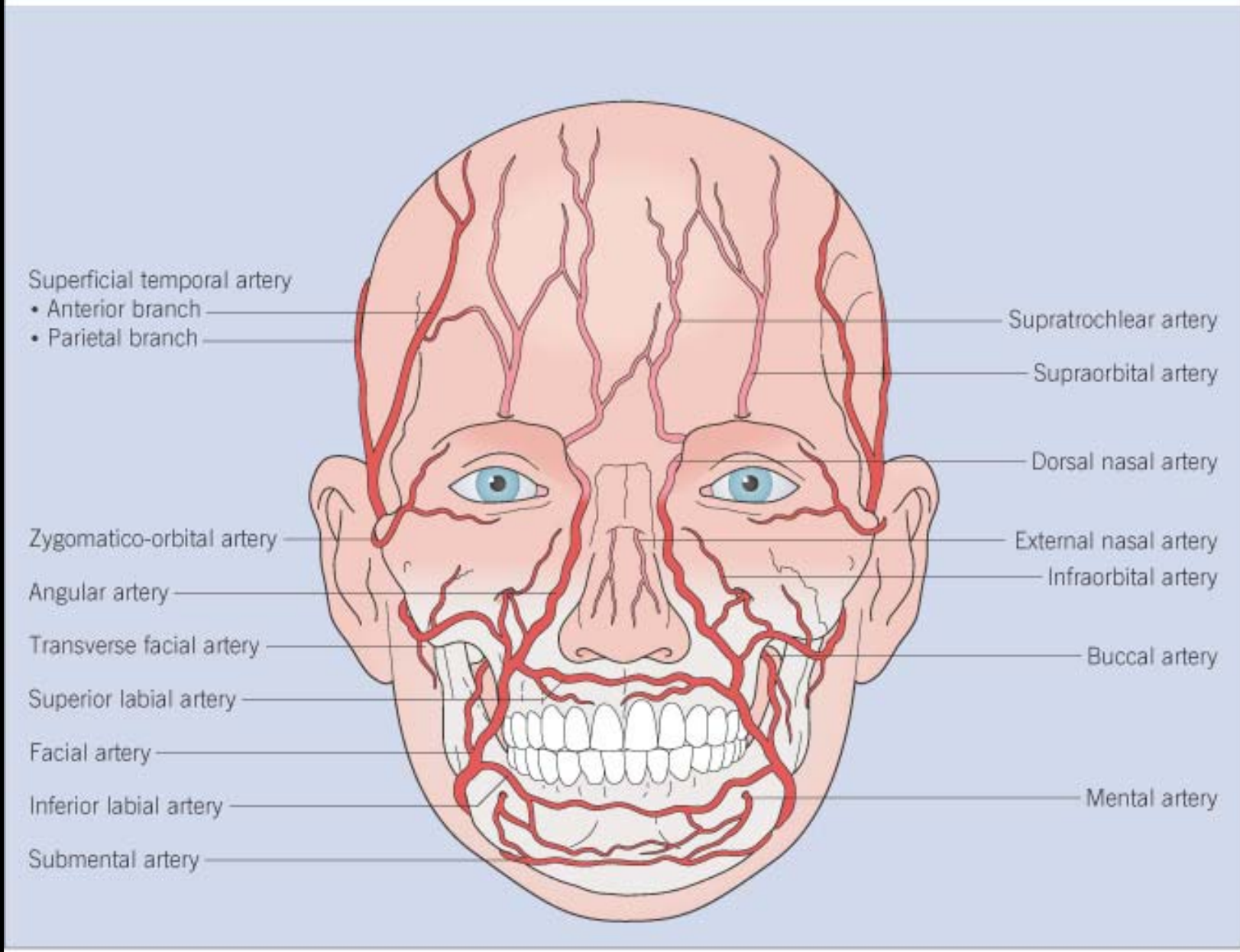
- Risk of of infection in cutaneous surgery is 1-2%
- Infection manifest on days 4-8
- Proper skin prep
  - 70% isopropyl alcohol
  - Chlorhexidine
  - Iodophores
- Standard Precautions

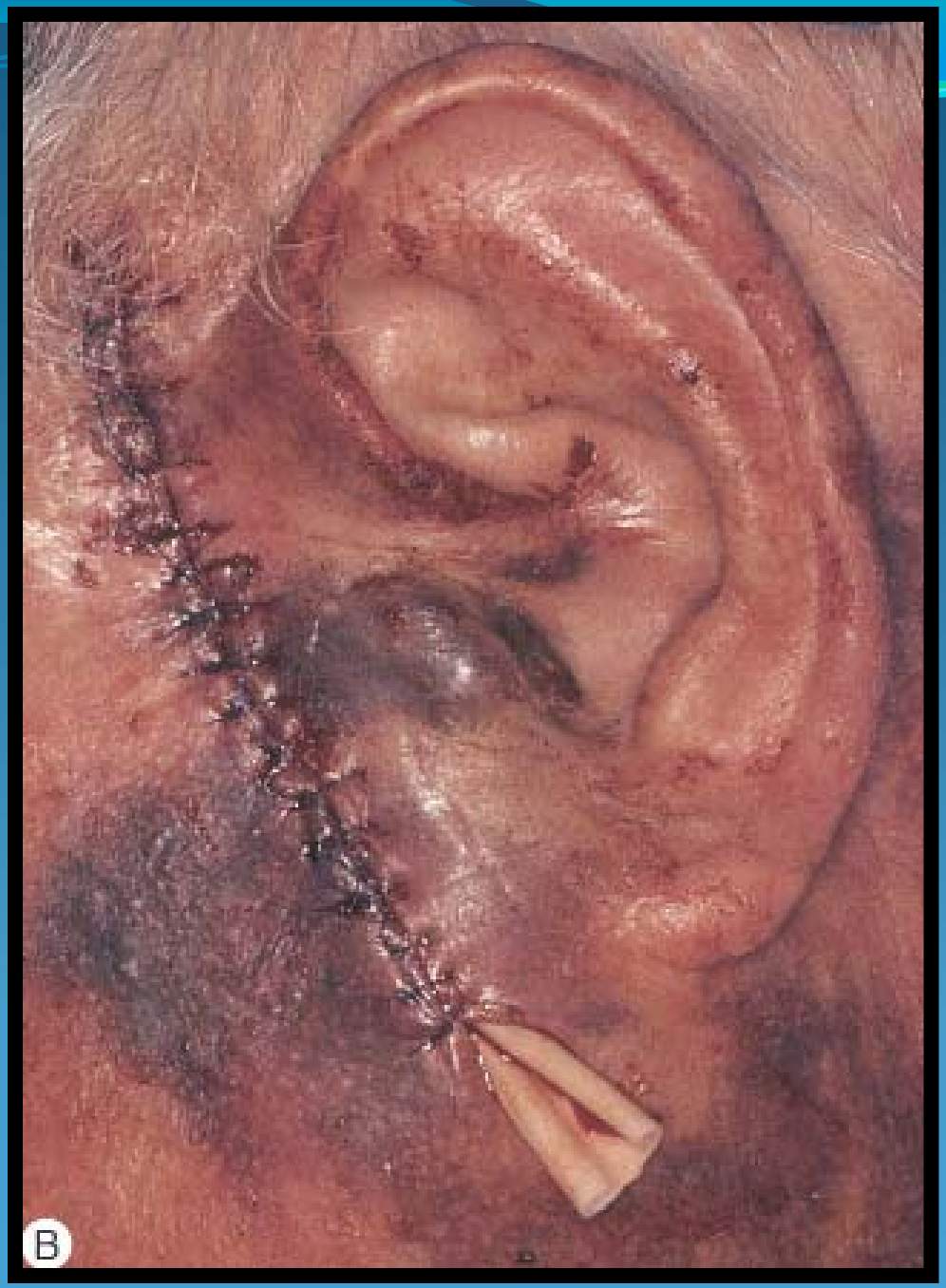


BLEEDING

- **<u>How to minimize intraoperative bleeding.</u>**
  - Hx of meds i.e: coumadin, ASA, vit E, plavix
  - Know your anatomy!!!!
  - When hemostatsis is an issue, minimize undermining, increase # of sutures, and simplify closures.
  - Cauterize or tie when necessary
  - Consider hemostatic gels, foams or powders.
  - Apply pressure dressings
  - Give written post operative instructions
  - Place a drain if needed

ARTERIAL SUPPLY OF THE FACE

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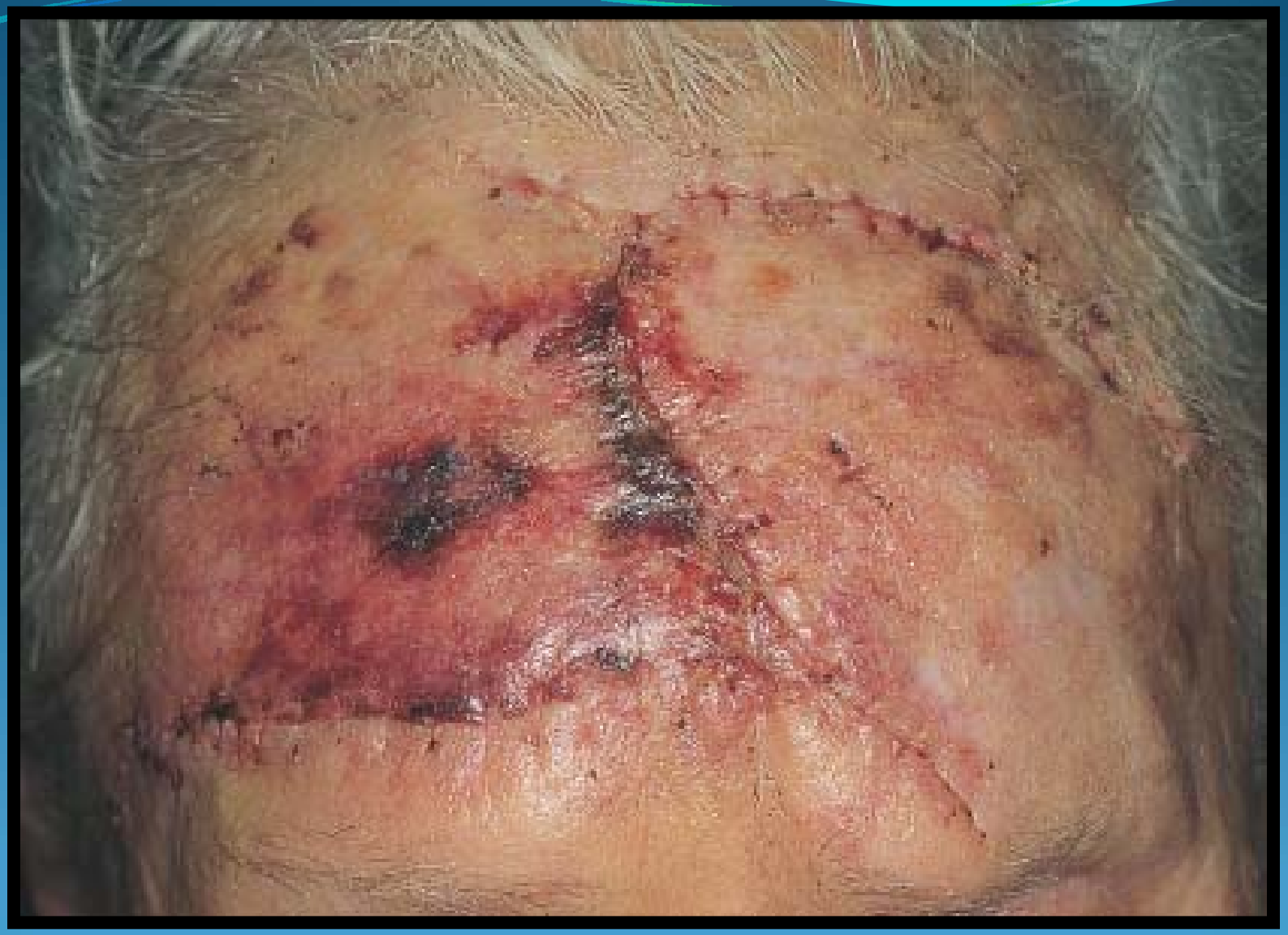
TISSUE INJURY

- Minimize tissue injury
  - Use skin hooks, or single tooth forceps, and use sparingly
  - Grasp wound edges lightly
  - Minimize caudery, not only does it injure tissue but increases infection risk.

WOUND TENSION

- Excessive Tension on wound edges causes necrosis, dehiscence, and pain.
- Techniques to avoid tension.
  - Adequate Undermining
  - Buried sutures
  - Orient closure to maximize tissue reservoirs
  - Use flaps or grafts
  - Consider second intent healing or partial closure.

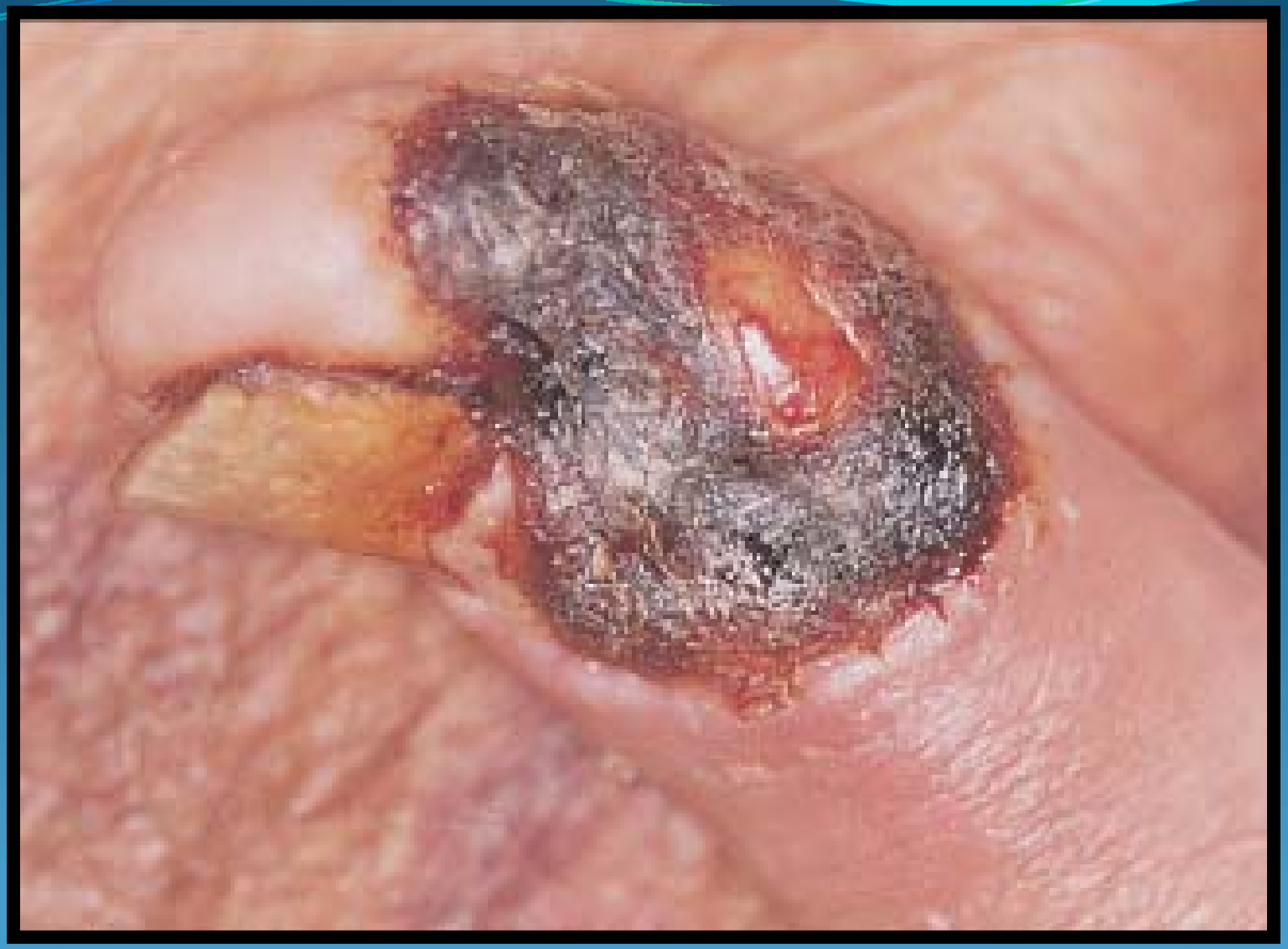


NECROSIS

- Necrosis is a postoperative finding, that is usually do to intraoperative issues.
- Factors leading to Necrosis.
  - Hematoma
  - Infection
  - Tension
  - Smoking
  - Superficial undermining

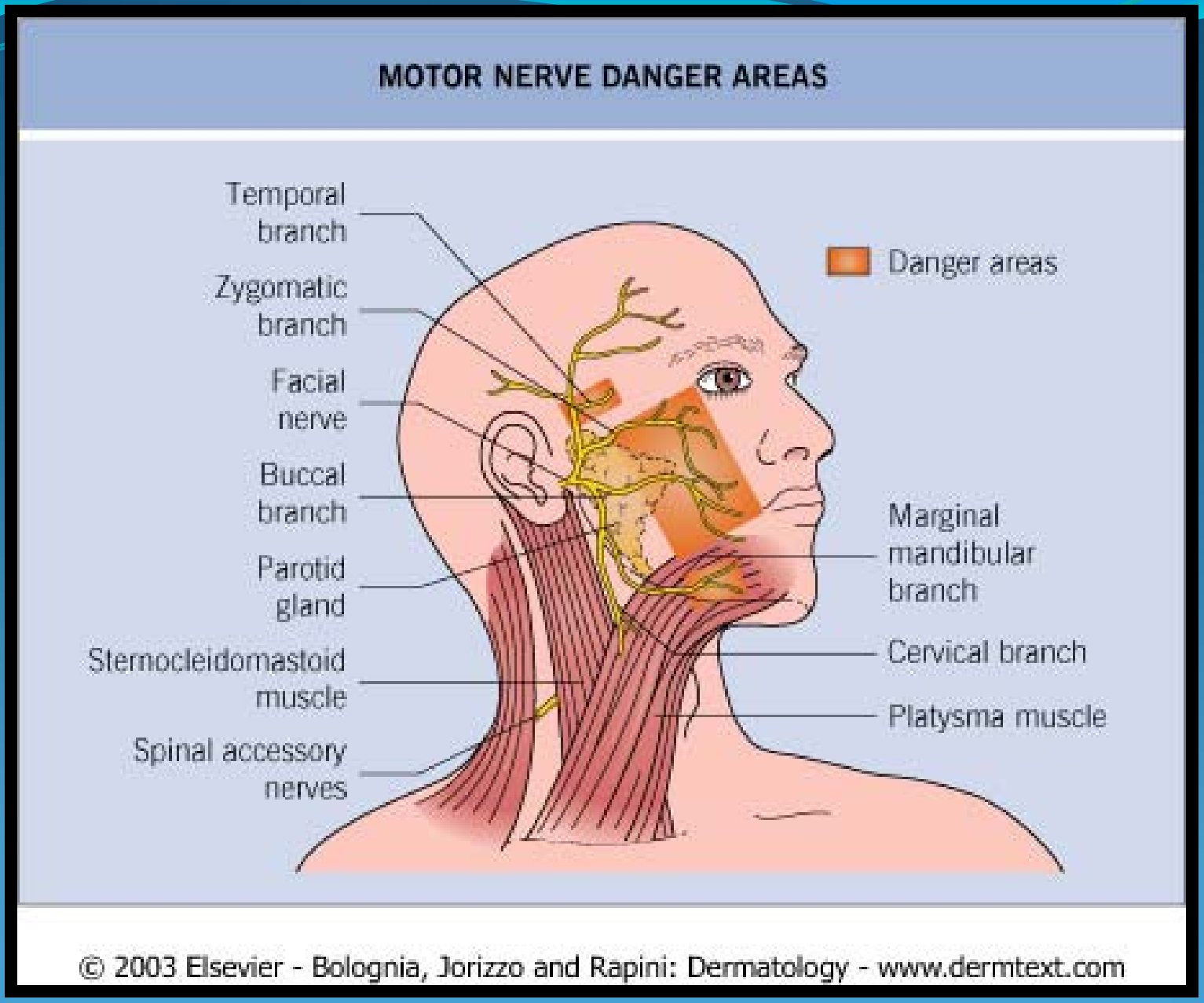
NECROSIS

- Necrosis is a postoperative finding, that is usually do to intraoperative issues.
- Factors leading to Necrosis.
  - Flap ratios > 3:1
  - FTSG placed over avascular beds
  - Epinephrine used in acral sites such as the penis or fingers.



NERVE DEFICITS

- PERMANENT AND UNCORECTABLE!!
- The KEY is knowing the ANATOMY!
- Pretest patient for deficits
- Be aware that anesthesia will cause temporary deficits


MOTOR NERVE DANGER AREAS
Temporal branch
Zygomatic branch
Facial nerve
Buccal branch
Parotid gland
Sternocleidomastoid muscle
Spinal accessory nerves
Danger areas
Marginal mandibular branch
Cervical branch
Platysma muscle
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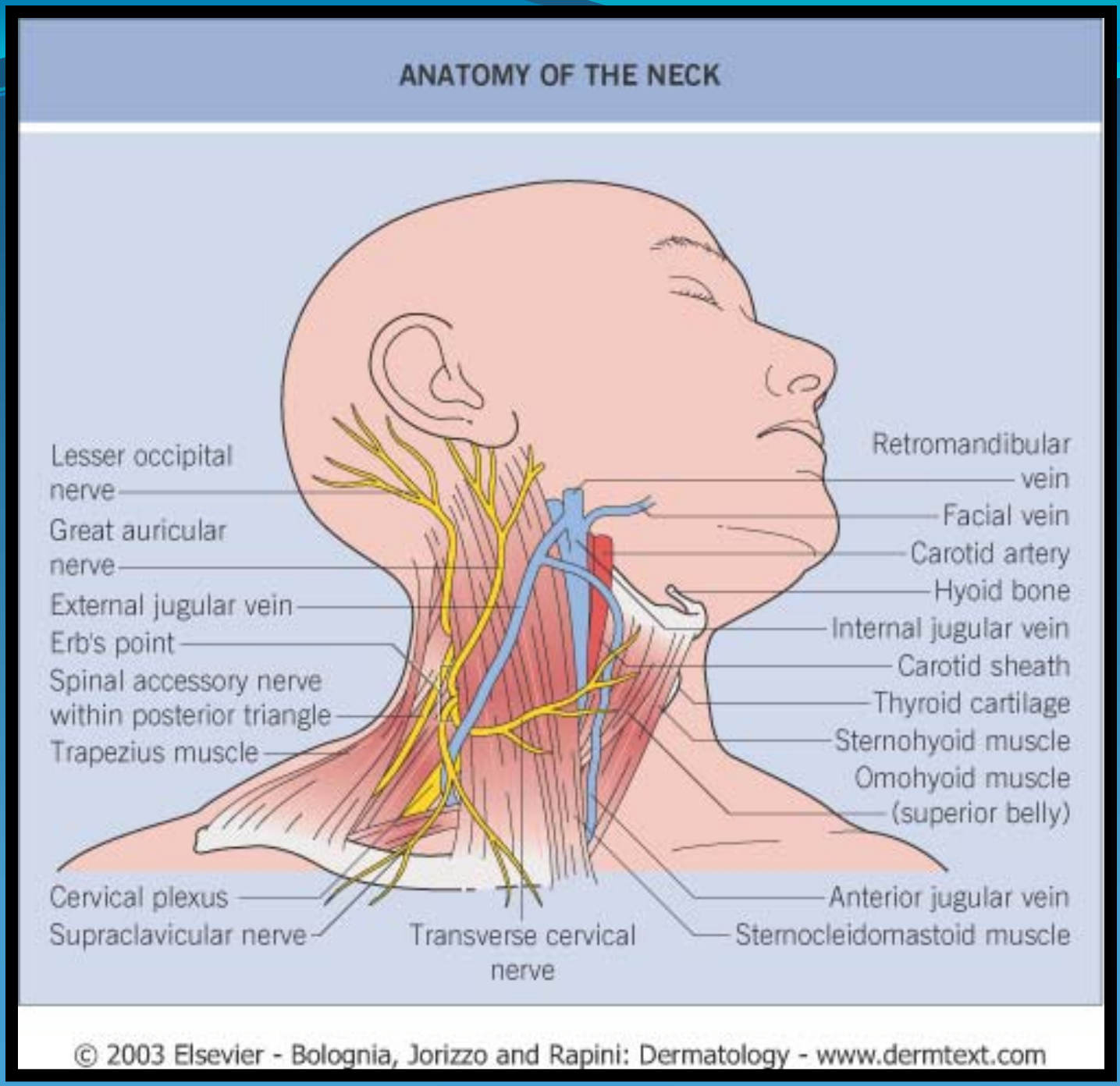
ANATOMY OF THE NECK
Lesser occipital nerve
Great auricular nerve
External jugular vein
Erb's point
Spinal accessory nerve within posterior triangle
Trapezius muscle
Cervical plexus
Supraclavicular nerve
Transverse cervical nerve
Retromandibular vein
Facial vein
Carotid artery
Hyoid bone
Internal jugular vein
Carotid sheath
Thyroid cartilage
Sternohyoid muscle
Omohyoid muscle (superior belly)
Anterior jugular vein
Sternocleidomastoid muscle
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POSTOPERATIVE COMPLICATIONS

- **OBJECTIVES**
  - Recognizing and Treating post-op Hematomas
  - Recognizing and Treating Necrosis
  - Recognizing and Treating wound infection
  - Learn how to minimize Dehiscence
  - Learn how to improve wound appearance

POST-OP BLEEDING

- POST-OP BLEEDING HAS 3 PRESENTATIONS
  - ACTIVE BLEEDING
  - HEMATOMA
  - ECHYMOSIS

ACTIVE BLEEDING

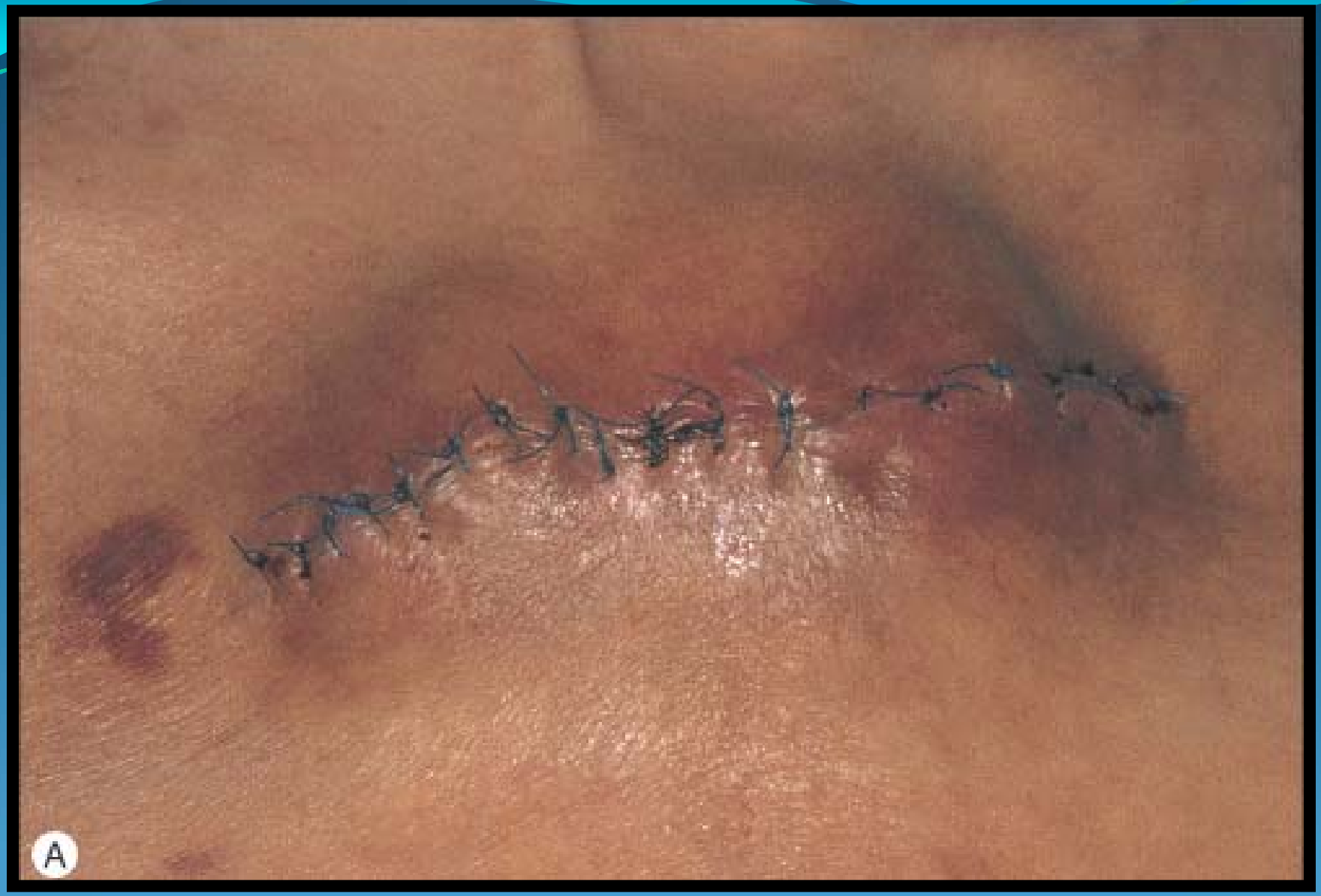
- APPROACHES
  - A small amount of bleeding is normal
  - First attempt direct pressure for 15-20 minutes
  - Second wound must be opened and explored
  - Cauterize or tie active vessels, may require drain placement if bleeding is diffuse. j

ECCHYMOSIS

- Slow leakage of blood.
- Common around eye and upper chest
- Will resolve over period of weeks.
- Counsel patient that no residual sequelae will result.

HEMATOMA

- Hematomas form when bleeding occurs into a closed space.
- Present with pain and swelling during the first 48hrs.
- Treatment
  - Evacuate hematomas < 48hrs old, and close wound with drain placement.
  - Organized hematomas have to reabsorb.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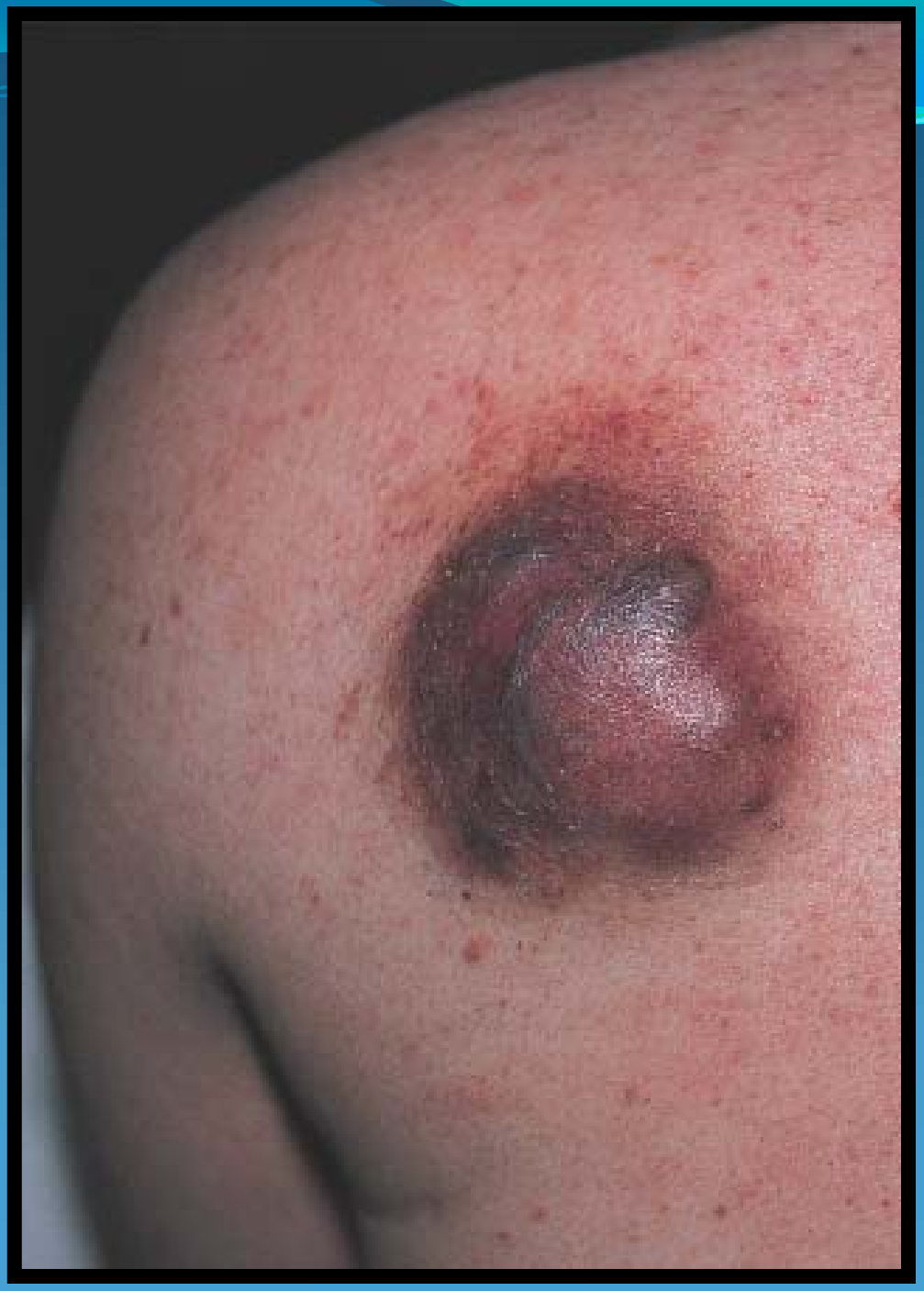


WOUND INFECTION

- Typically presents 4-8 days post-op with erythema, warmth, tenderness, lymphangitis, systemic symptoms and possible abscess.
- Apply heat, elevate and rest the area.
- Abscess should be drained, and packed with iodiform gauze daily.
- Culture and empirically start antibiotics

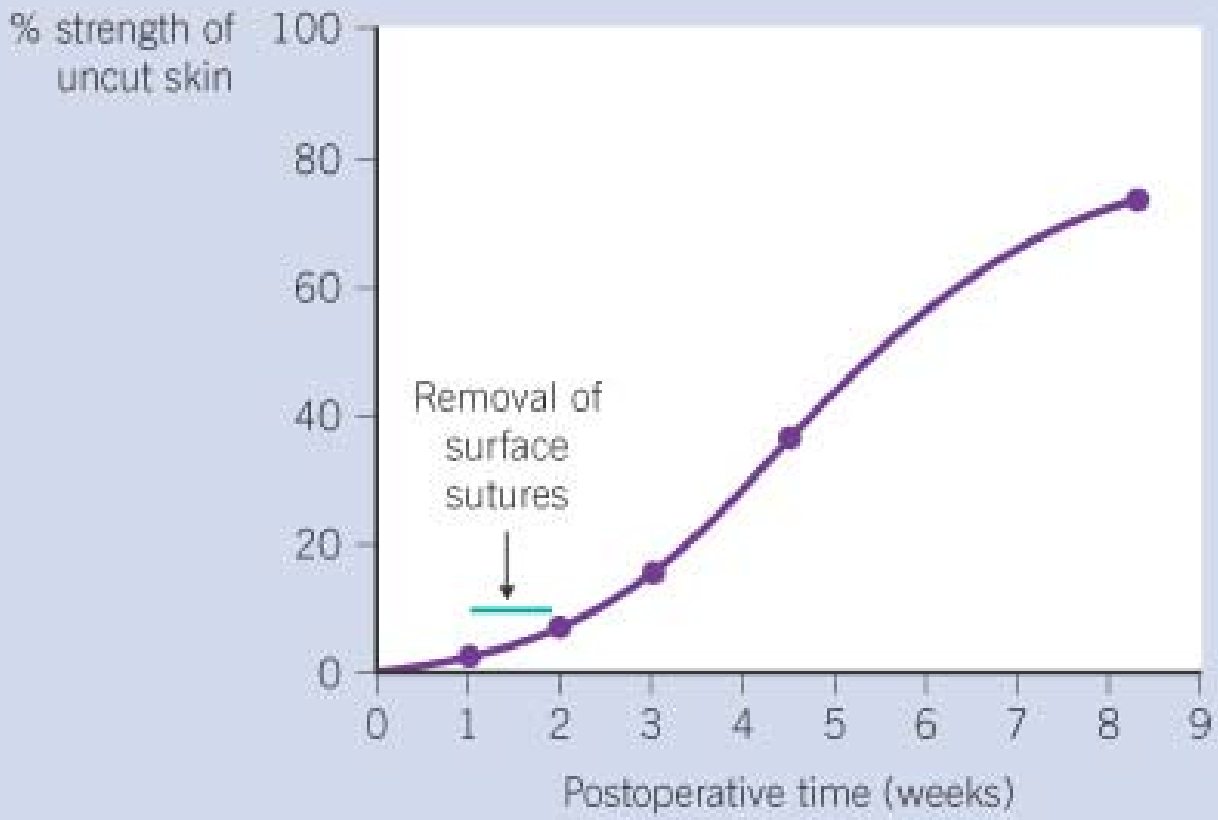
NECROSIS

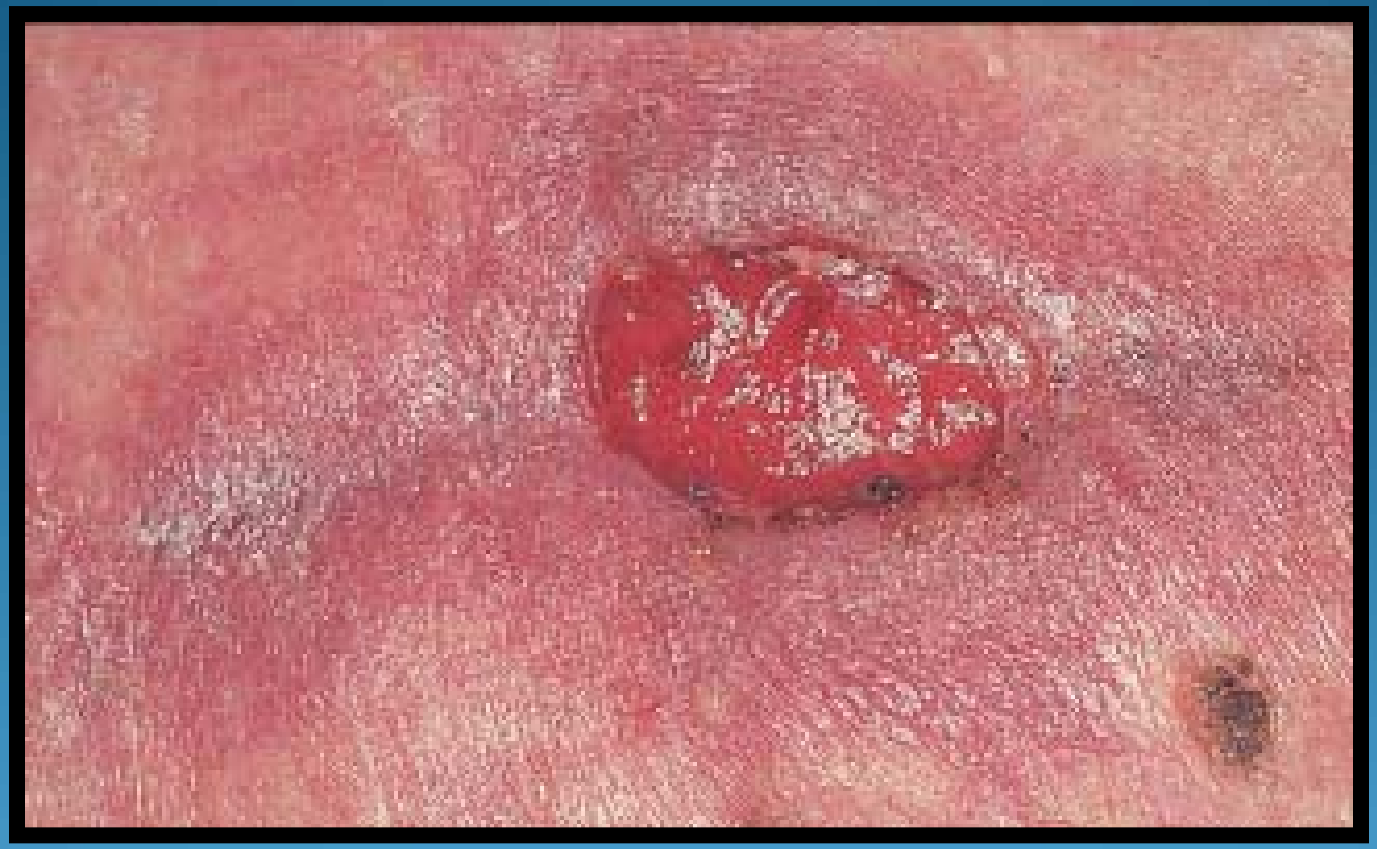
- Initially presents with pallor or cyanosis.
- Early Interventions
  - Strategic suture removal
  - Elevation to reduce edema and increase blood flow.
  - Gently heat
  - Hyperbaric oxygen
- If Necrosis is established the wound should be left alone, and eschar allowed to separate on its own.

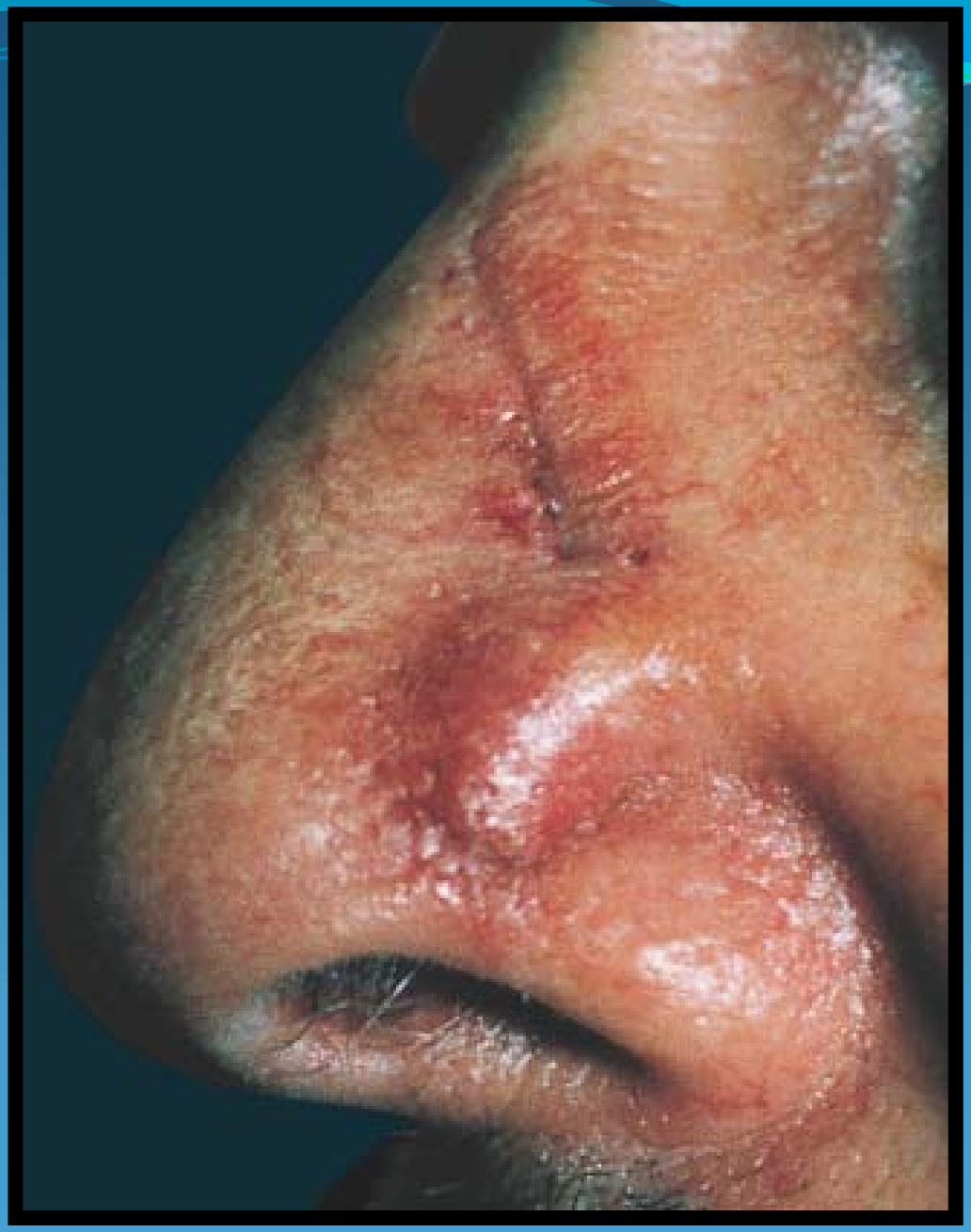
DEHISCENCE

- Typically occurs immediately after suture removal.
- Inform patients that scars are very weak
- Use buried sutures
- Adhesive strips supply support for only 1-2 days.
- Consider staged removal of sutures if concerned.

TENSILE STRENGTH OF SKIN POST INCISION







WOUND APPEARANCE

- COMPLICATIONS
  - Spitting sutures
  - Contact dermatitis
  - Suture Tracks
  - Keloids and hypertrophic scars
  - Spread scars
  - Trap door deformity
  - Hyper/hypopigmentation