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 infection in cutaneous surgery is 1-2%
- Infection manifest on days 4-8
- Proper skin prep
  - 70% isopropyl alcohol
  - Chlorhexidine
  - Iodophores
- Standard Precautions
How to minimize intraoperative bleeding.

- Hx of meds i.e: coumadin, ASA, vit E, plavix
- Know your anatomy!!!!
- When hemostasis 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
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 is a postoperative finding, that is usually due 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

Marginal mandibular branch
Cervical branch
Platysma muscle

Danger areas
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.
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.
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

% strength of uncut skin

Postoperative time (weeks)

Removal of surface sutures

WOUND APPEARANCE

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