Basic Office Procedures

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Conflicts of Interest:
Speaker does not have any conflicts of interest to disclose.

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There is no commercial support or sponsorship for this activity.

Objectives

- Recognize indications, precautions, and contraindications for basic office procedures
- Discuss treatments and follow-up care for clinical procedures
- Describe techniques for fluorescein eye exam, cerumen removal, local anesthesia, evacuation of subungual hematoma, incision & drainage of abscess, and basic wound closure

References

- Colyar, M. R. (2020). *Advanced Practice Nursing Procedures* (2nd ed.). F.A. Davis Company.

3rd Ed will be released 9/2024

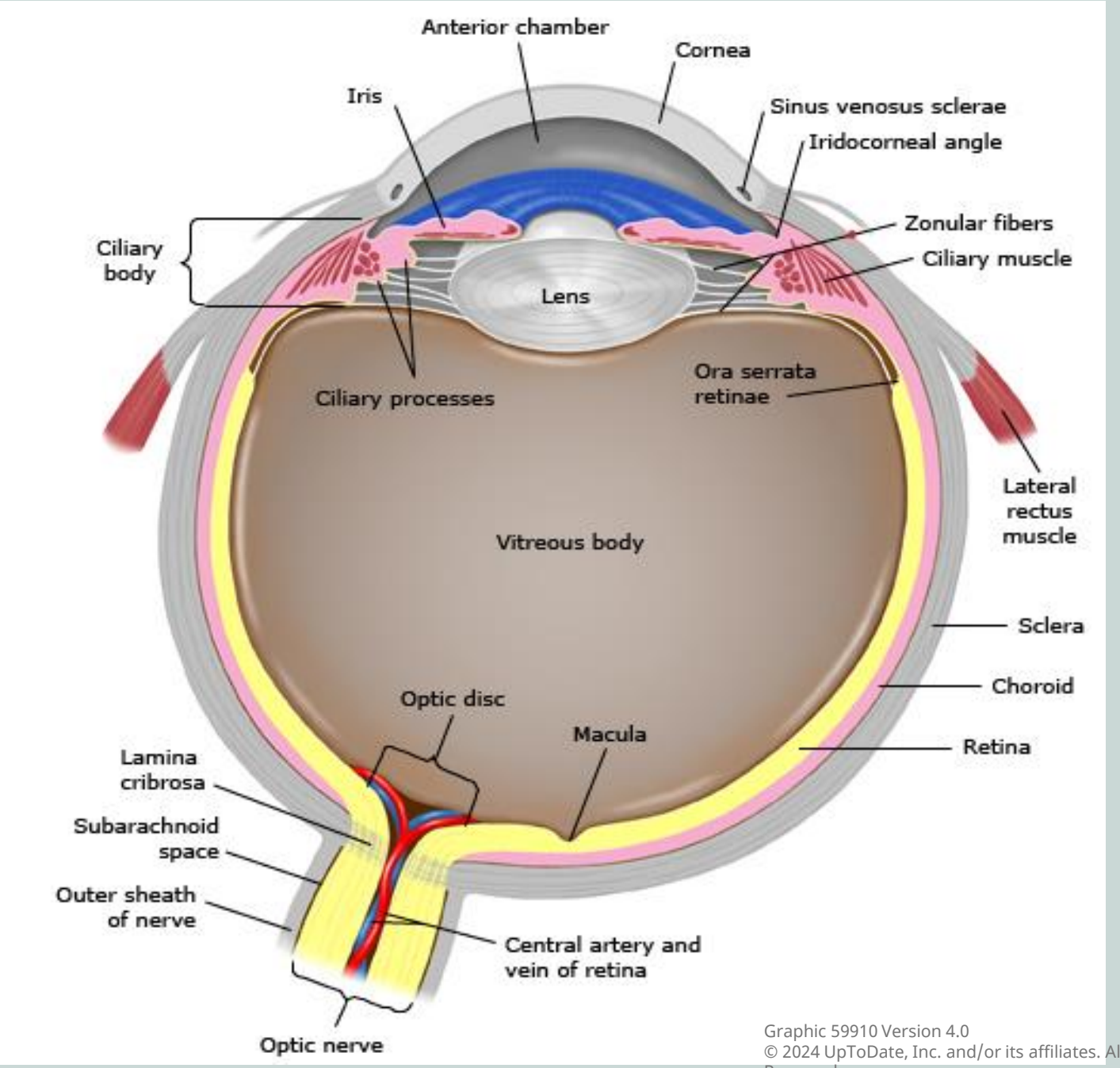
- UpToDate
- On the Job / Personal Experience

Office Procedures

- Fluorescein Eye Exam
- Cerumen Removal
- Local Anesthesia
- Evacuation of Subungual Hematoma
- Incision & Drainage of Abscess
- Basic Wound Closure

Fluorescein Eye Exam

Eye Anatomy



Typical Presentation

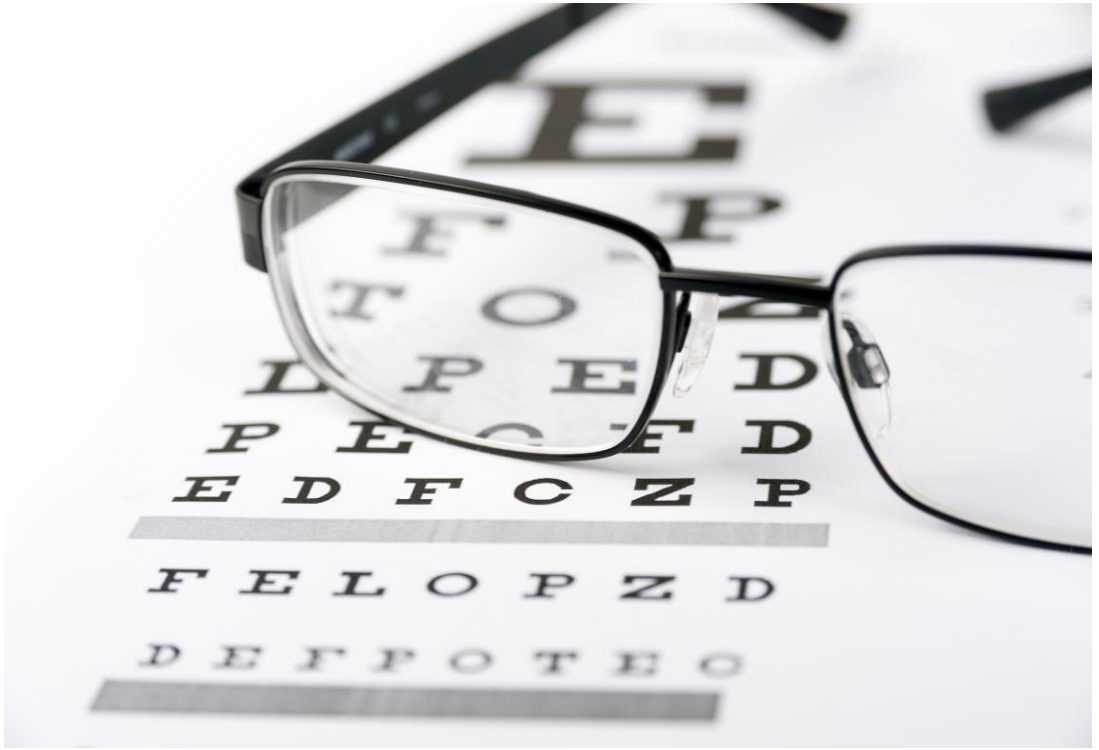
- Eye pain
- Eye redness
- Tearing
- Foreign body sensation
- Photophobia
- History of eye trauma

Equipment

- Topical anesthetic (tetracaine, proparacaine)
- Fluorescein strip
- pH paper
- Sterile saline solution
- Fluorescent light
- Cotton tipped applicator
- Towel/chux/paper drape
- 4x4 sterile gauze
- Snellen eye chart
- Pen light/ophthalmoscope
- Magnifying headband may be helpful
- Slit lamp if available and knowledgeable on use

Pre Procedure

- Before you stain:
  - Perform visual acuity examination; compare to baseline if available
  - PERRLA
  - Extraocular movements
  - Visual fields
  - Fundoscopic exam
  - Slit lamp exam

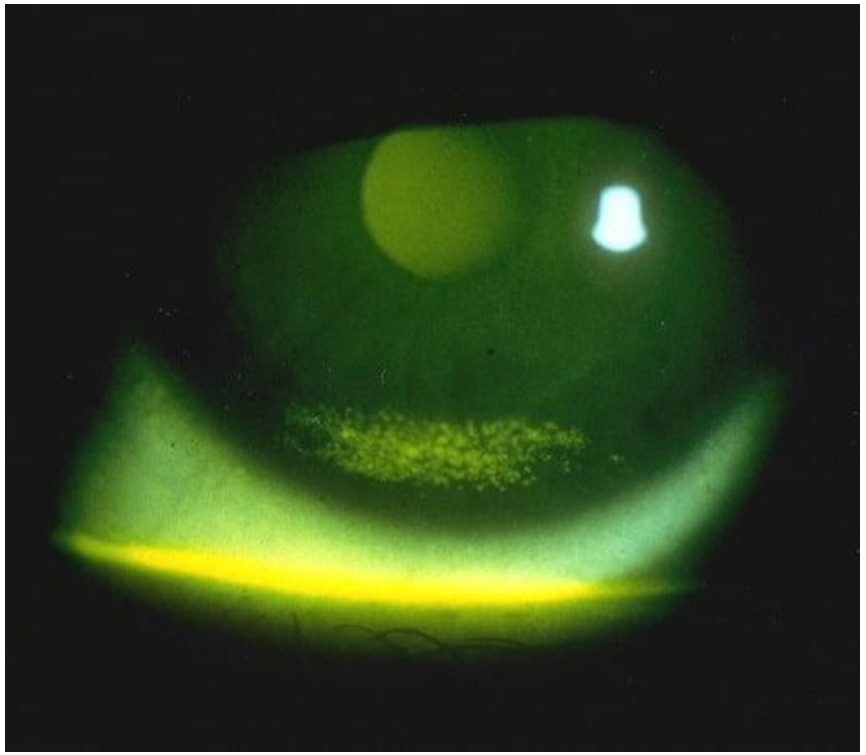


Procedure

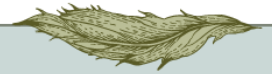
- Lay patient supine on exam table, may use pillow
- Place drape behind head, over shoulder of affected side
- Use pH paper to determine abnormality if exposed chemical exposure
- Apply one drop topical anesthetic to eye, have patient blink
- Eversion of upper lid using cotton tipped applicator
- Apply drop of anesthetic or sterile saline to fluorescein strip

Procedure

- Gently place fluorescein in inferior cul de sac of eye by pulling the lower lid down and gently touching strip to bulbar conjunctiva
- Have patient blink to distribute dye
- Turn off lights in exam room; crack door open or have dim light source a few feet away from patient
- Examine with fluorescent light
- Turn on lights; may rinse eye with saline solution



Treatment

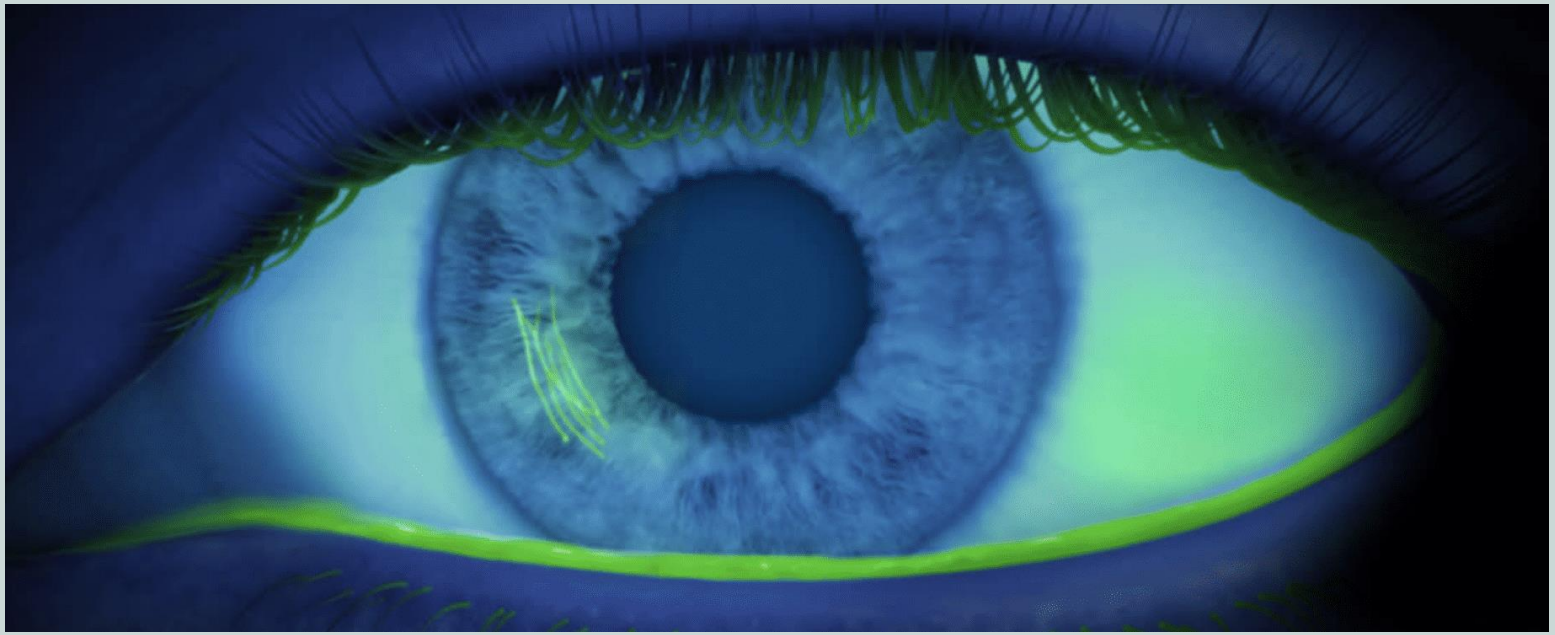


- Pain control
  - Oral vs topical NSAIDs
  - Artificial tears – not lubricating drops
- Update tetanus
- Topical medications
    - Ointment vs drops
- Follow up in 24 hours or ophthalmology referral/consult
- Avoid contact lenses and eye makeup until treatment complete
- Encourage proper eye protection

Common Findings and Treatments

- Corneal abrasion
- Herpes zoster ophthalmicus
- Corneal ulcer
- Foreign body
- Ocular emergencies

Corneal Abrasion



Corneal Abrasion

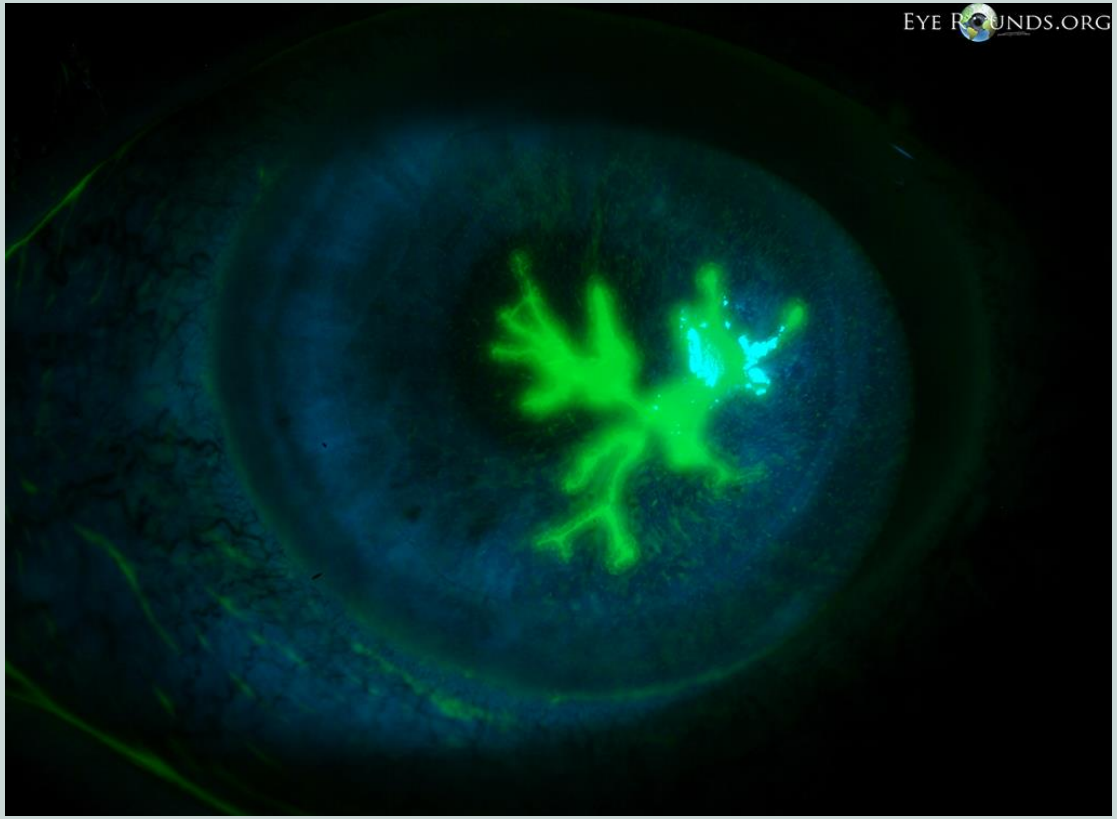
- Defect in the corneal surface epithelium
- Should not be treated with a topical corticosteroid

Medication	Dosage
Erythromycin 0.5% ophthalmic ointment	½" ribbon four times daily for 3-5 days
Trimethoprim-polymyxin B 0.1%-10,000 units/mL	1 drop four times daily for 3-5 days
*Ciprofloxacin 0.3% ophthalmic ointment	½" ribbon four times daily for 3-5 days
*Ciprofloxacin 0.3% ophthalmic solution	1-2 drops four times daily for 3-5 days
*Ofloxacin 0.3% ophthalmic solution	1-2 drops four times daily for 3-5 days
*Tobramycin 0.3% ophthalmic ointment	½" ribbon, two to three times daily for 3-5 days
*Tobramycin 0.3% ophthalmic solution	1-2 drops four times daily for 3-5 days

* Antipseudomonal topical antibiotics preferred in contact lens wearers

Herpes Zoster Ophthalmicus

- Herpes zoster involvement of the ophthalmic division of 5th CN
- Prodrome: headache, malaise, fever; pain or altered sensation in affected eye, forehead, top of head
- May involve epithelial, stromal, or endothelial layers of cornea
- Vesicular lesions on side or tip of nose correlate highly with eye involvement
- Early diagnosis and treatment critical to prevent further corneal involvement and loss of vision



Herpes Zoster Ophthalmicus

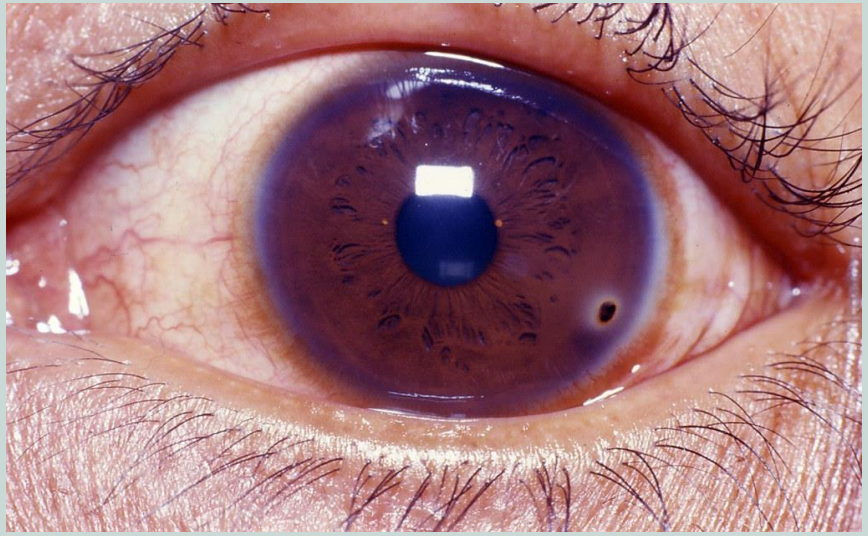
- Oral antiviral medications
  - Acyclovir 800mg PO five times daily
  - Valacyclovir 1g PO three times daily
  - Famciclovir 500mg PO three times daily
  - 7-day course for immunocompetent patients
- Immunocompromised patients or those requiring hospitalization should receive IV acyclovir for 7-14 days
- Topical steroids
  - Prednisolone acetate: instill 1-2 drops in the affected eye(s) 2 to 4 times daily

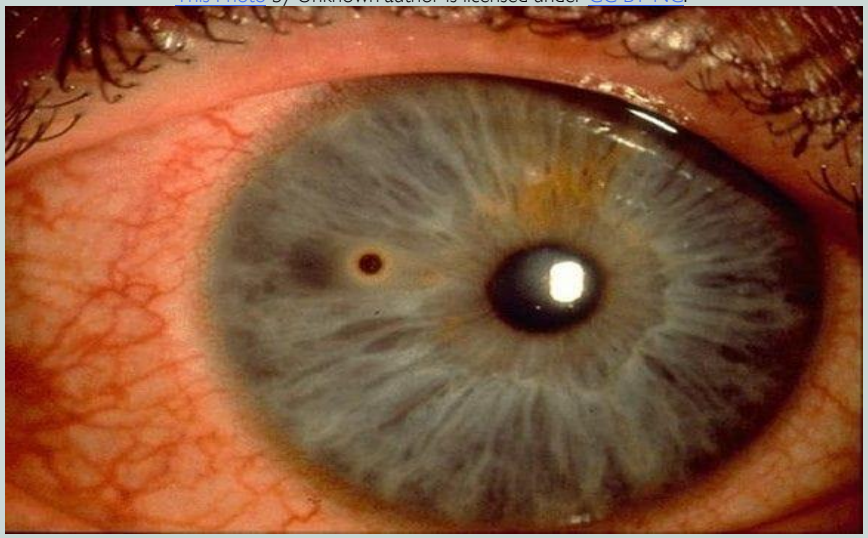
Corneal Ulcer / Ulcerative Keratitis

- Inflammatory or infectious process involving disruption of epithelial layer
- At risk:
  - Contact lens wearers
  - Farmers
  - Vitamin A deficiency
  - Chemical injury
  - Dry eyes
  - Trichiasis (inturning of eyelashes)
  - Immune disorders
- Treatment: ciprofloxacin or ofloxacin eye drops every hour
- Urgent referral to ophthalmology within 12-24 hours

Foreign Body

- Typical causes
  - Rust, wood, glass, plastic, fiberglass, or vegetable material embedded in the cornea or inner lid
- May attempt to remove with moistened cotton tipped applicator or swab
- Assess for coinciding abrasion
- Foreign bodies containing metal may form rust ring
  - This must be removed promptly by ophthalmology
  - Can cause permanent staining of the cornea, persistent inflammation, or disruption of corneal integrity





Ocular Emergencies

- Open globe injuries
  - Full thickness wound of eye wall
  - Rupture, laceration
  - Avoid placing medications in eye
  - Eye shield
- Significant blunt trauma with an associated hyphema
- Contact with acids or alkalis
  - Irrigation until neutral pH achieved
  - Morgan lens

Hoff AM Stead LG, Smith VD. Traumatic globe laceration. J Trauma 2010; 68:746. Copyright © 2010 Lippincott Williams & Wilkins.

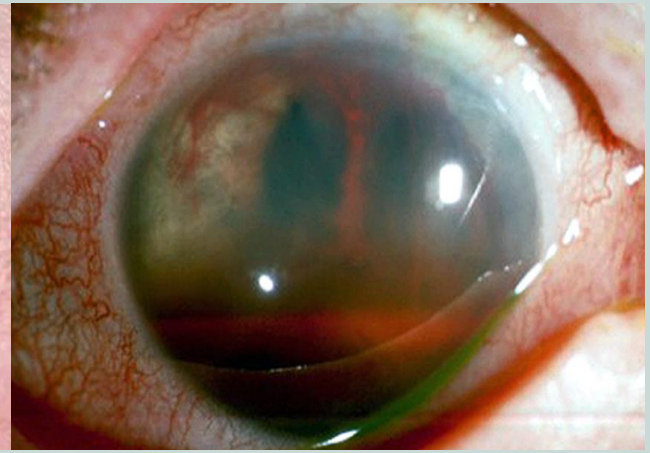


Photo courtesy of Kathryn A Colby, MD, PhD, Massachusetts Eye and Ear Infirmary, Boston.

Cerumen Removal

Cerumen Impaction

Affects approximately 1 in 10 children, 1 in 20 adults, and 1 in 3 older adults

Main causes

Ear canal disease	Narrowing of ear canal	Failure of epithelial migration	Overproduction

Clinical presentation

Hearing loss	Earache	Ear fullness	Itchiness	Reflex cough	Dizziness	Tinnitus

Cerumen Impaction Removal

Contraindications

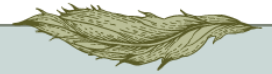
- Drainage from the ear – yellow, green, or bloody exudate
- Tympanic membrane disrupted

Possible complications

- TM perforation
- Vertigo
- Tinnitus
- Abrasions of external ear canal
- Decrease or loss of hearing
- Pain –STOP if patient reports pain at any point during procedure

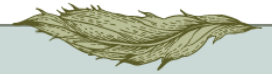
Figure 2. Otoscopic view of impacted cerumen that completely fills the ear canal.8
Published in Otolaryngology Head & Neck Surgery 2017

Cerumenolytic Agents



- No history of infections, perforations, or otologic surgery
- Mineral oil, hydrogen peroxide, carbamide peroxide
  - Carbamide peroxide (Debrox) is common
- 5-10 drops twice daily up to 4 days
- May flush afterward with lukewarm water and bulb syringe
- Avoid peroxide products for patients with dryness or excessive exfoliation of ear canal skin

Irrigation



- Dilute hydrogen peroxide with room temp water (1:10)
- Use large syringe (200mL) or irrigation kit
  - May use curved tip syringe if available
- Straighten ear canal as much as possible
  - Pull up and posterior on the auricle to straighten
- Do not place tip past lateral 1/3 of ear canal
- Direct stream upwards in the ear canal

Manual Removal

- Should be performed by clinicians with adequate experience and appropriate equipment
- Requires adequate visualization with otoscope or binocular microscope
- Most effective for cerumen in lateral 1/3 of ear canal
- Not effective in uncooperative patients, impaction against TM, or very hard cerumen

Local Anesthesia

Local Anesthesia Principles

Fibers that carry sensation of pain are thin with no myelin sheath

Fiber that carry sensation of touch and pressure are thicker and myelinated

Local anesthesia infiltrates tissues and diffuses across neural sheaths and membranes; acts by interfering with neural depolarization and transmission of impulses

Local Anesthesia Principles

Typically, 1% lidocaine will block pain sensation; 2% is needed to block the sensation of touch and pressure as well as pain

Need to keep in mind onset and duration of action for specific procedures

Toxicity can be related to local vascularity, type and amount of agent used, concentration, technique/accuracy of injection, and adjunctive use of epinephrine

Tips to Prevent Toxicity and Adverse Reactions

- Avoid injecting into a blood vessel
- Never infiltrate as needle is being advanced
- Do not exceed recommended doses
- Keep the patient supine for procedure
- Do not use epinephrine on distal appendages
- Use epi with caution in those with DM, HTN, ASVD, thyrotoxicosis, or heart block
- Avoid agents that cause cross-sensitivity

Common Injectable Anesthetics

Agent	Concentration	Onset	Duration	Maximum Dose
Lidocaine	1%	< 1 minute	½-2 hours	4.5mg/kg (30 cc)
Lidocaine with epi	1%	< 1 minute	2-6 hours	7mg/kg (50cc)
Lidocaine	2%	< 1 minute	½-2 hours	2-3 mg/kg (15-20cc)
Bupivicaine	0.25%	5 minutes	2-4 hours	3mg/kg (30cc)
Bupivicaine with epi	0.25%	5 minutes	3-7 hours	3mg/kg (50cc)
Mepivicaine	1%	3-5 minutes	1-3 hours	5mg/kg (30cc)

Tips to Decrease Pain

- Use a small needle: 27-30g
- Pinch up skin and inject slowly
- Warm anesthetic agent
- Use a buffering agent: sodium bicarbonate
- Apply ice or a topical refrigerant
- Use EMLA cream or ELA-Max
  - Longer onset
- Consider Tetracaine with Epinephrine/Adrenaline (LAT or LET)
  - Vermillion border, difficult approximation of edges, children

Digital Block

Digital Block

Recommended for lacerations and procedures distal to the level of the mid-proximal phalanx of a finger or toe

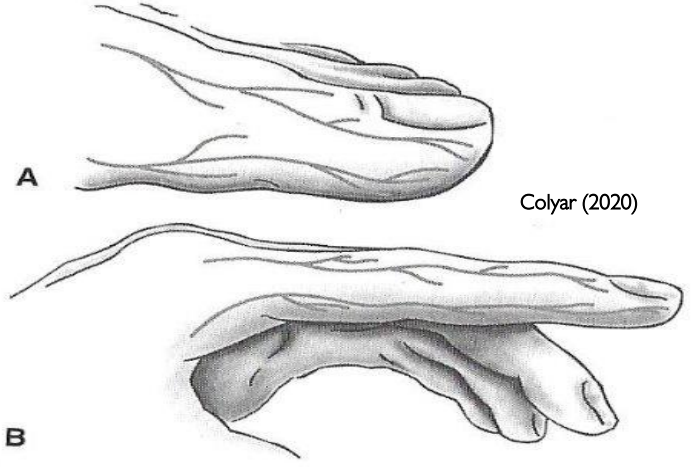
Useful for suturing lacerations of digits, wedge resection of nails, drainage of paronychia

Precautions/Contraindications

History of allergy to local anesthetics

Anatomy

- Four digital nerves are present in each digit/phalange
- The four digital nerves lie immediately adjacent to the phalanges
- Of these, the two palmar digital nerves are dominant
- The dorsal digital nerves may have a dominant central portion
- A full 20 minutes after injection may be required for full anesthesia



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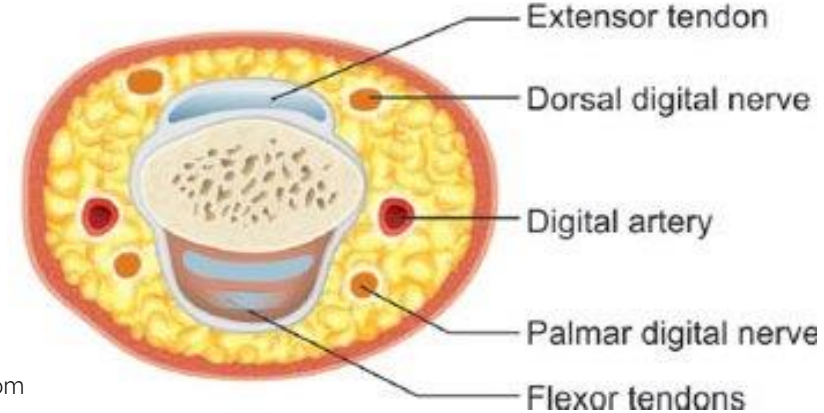

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Equipment

- Non-sterile drape and gloves
- Antiseptic skin cleansing agent
- 1½" needle to measure depth
- 10cc syringe (3-5ml) with 27-30 gauge 1” needle
- Local anesthetic agent: i.e. lidocaine 1-2% (without epinephrine)
- 2x2 or 4x4 gauze

Procedure

- Position the client supine with the digit easily accessible
- Cleanse skin
- Determine depth needed for dorsal anesthesia by measuring finger depth with 1½" needle
- Put on gloves
- Using new needle/10cc syringe with anesthetic, introduce needle into dorsal, lateral aspect of proximal phalanx in web space
- Advance slowly until bone detected; follow along bone to palmar/volar region until pre-determined depth is reached

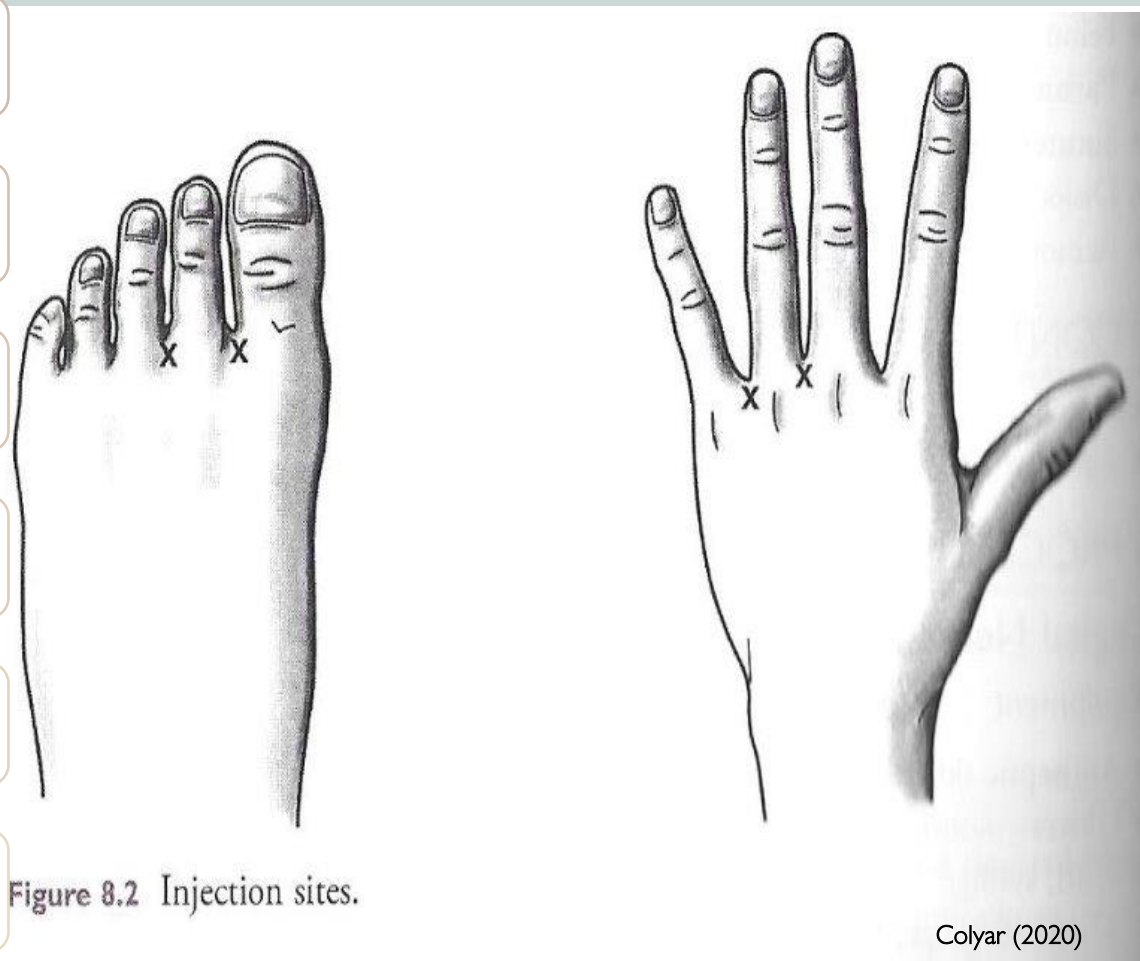

Figure 8.2 Injection sites.

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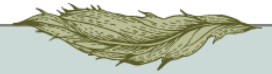
Procedure Cont'd



- Aspirate, then inject 1-2mL of anesthetic
- Back needle out slowly while passing adjacent to bone and inject 0.5cc of anesthetic into dorsal surface prior to withdrawing needle
- Repeat procedure on medial aspect of digit – but do not fully withdraw needle
- Instead, stop withdrawing just below skin surface, angle needle 15-30 degrees, and advance across dorsum of finger without exiting the other side
- Aspirate, then inject 0.5cc of anesthetic while withdrawing needle completely
- Massage area gently & allow 5-20 minutes for full anesthesia

Transthecal Method

- Traditional Method
  - Locate flexor tendon by palpating at the level of the distal palmar crease or proximal digital crease
  - Prep area and place patient's hand flat and palm-side up on sterile drape
  - Hold syringe at a 45° angle
- Alternate Method
- Locate flexor tendon by palpating at level of the proximal digital crease or midpoint between the proximal digital and proximal interphalangeal joint creases
- Prep area and place patient's hand flat and palm-side up on sterile drape
- Hold syringe at a 90° angle

Transthecal Method

- Pierce skin surface with needle and advance into the flexor tendon sheath
- Once in sheath, slowly inject 1-2 mL of anesthetic solution
- The solution should flow freely into the synovial space between the tendon and sheath
  - If resistance is met, likely that needle tip is against or inside tendon
  - Withdraw slightly, until injection proceeds smoothly
- Distend the sheath slightly with anesthetic so that medication diffuses throughout sheath

Field Block

Field Block

Indications:

- Provides anesthesia to a relatively small area by injecting across the path of nerves supplying the area
- Will not distort the operative field

Precautions/Contraindications:

- History of allergy to local anesthetics
- Profound bleeding tendency or risk
- Septicemia
- Infected tissue that must be passed through for injection

Procedure

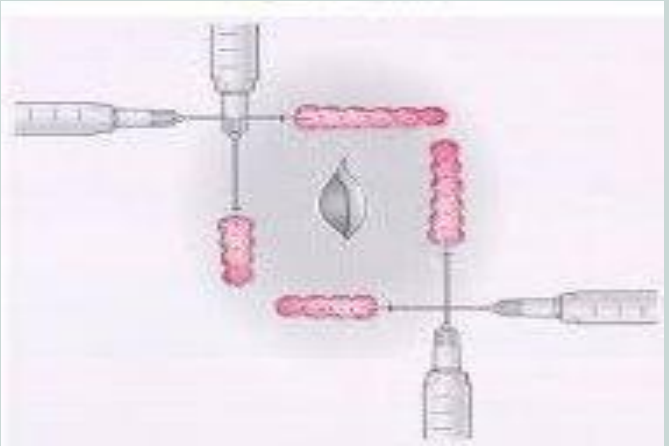
Insert needle into subcutaneous layer through intact, clean skin along margin of the contaminated wound or through uninfected skin immediately adjacent to area

Slowly inject small volumes of anesthetic as the needle is withdrawn

Reinsert the needle through area just anesthetized, redirecting along margins of the area and infiltrate additional anesthetic

Continue infiltration through previously injected skin until the entire region requiring anesthesia is infiltrated

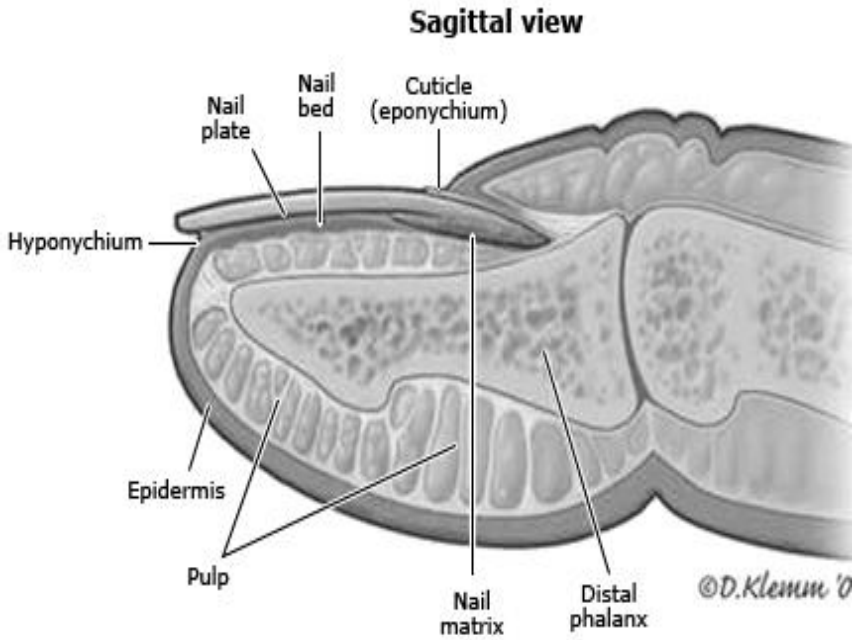
After a few minutes, lightly test the skin or wound margins for adequate anesthesia using the injection needle or other sharp object (suture needle, Adson forceps)



Evacuation of
Subungual Hematoma

Subungual Hematoma

- Bleeding under nail
- Common causes
  - Trauma
  - Medication
  - Systemic illness
  - Drug reaction
  - Aging



Patel L. Management of simple nail bed lacerations and subungual hematomas in the emergency department. Ped Emerg Care 2014; 30:742. DOI: 10.1097/PEC.0000000000000241. Copyright © 2014 Lippincott Williams & Wilkins.

Subungual Hematoma

- Indications:
  - Painful involvement of < 50% of nail bed following trauma within the past 4-6 hours
  - Relieve pain and salvage nail
- Precautions/Contraindications:
  - Fractured phalanx or crushed nail
  - Hematoma of > 50% of nail bed
  - Long-standing apparent hematoma without recalled injury
  - Altered vascular or neurologic status of the digit; past poor healing

Equipment

- Gloves
- Safety goggles/mask
- Antiseptic skin cleanser
- Electrocautery probe
- Gauze 2x2's or 4x4's
- Bacitracin or alternative topical antibiotic
- Bandaid
- If not using electrocautery:
  - Hemostats/ forceps
  - Lighter
  - Large paper clip, dermal tube, scalpel, or 18g needle

Procedure: Nail Trephination

Soak digit in soapy water for 5-10 minutes

Position client for comfort

Cleanse digit with cleanser

Drape digit with gauze

Put on gloves

Heat puncture device

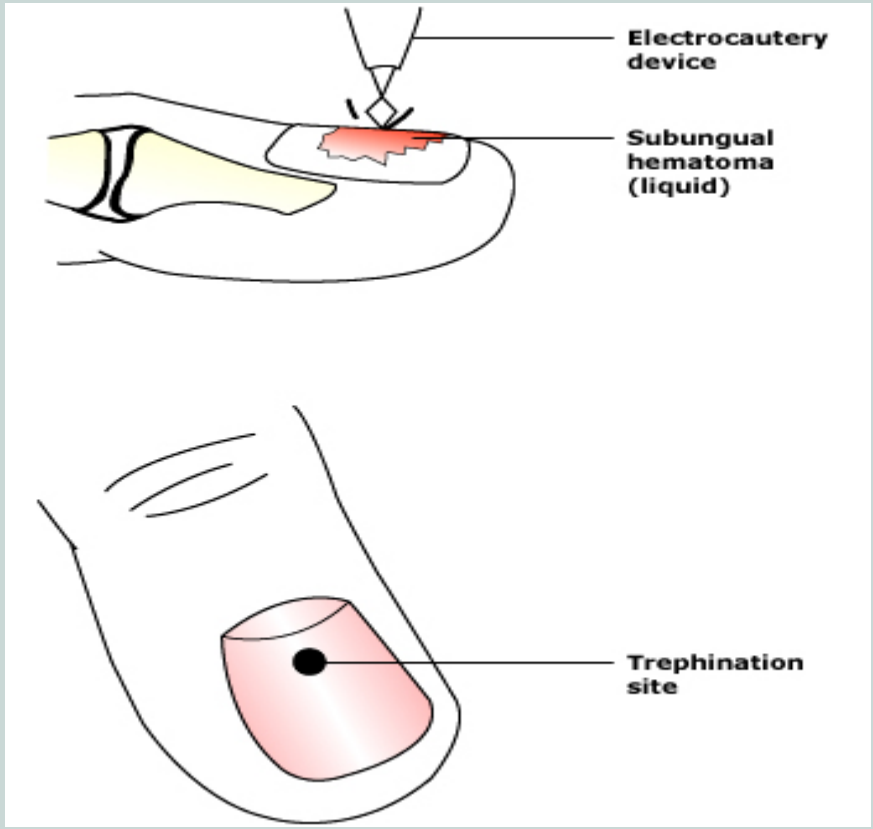
Puncture hole directly over center of hematoma with gentle, but firm pressure at 90-degree angle

Resistance will be felt for 1-2 mm; will cease with full penetration through nail

Gently massage or compress area to evacuate remainder of hematoma if necessary

Re-cleanse and apply antibiotic and band-aid

Nail Trephination



Courtesy of Rebecca K Fastle, MD.
Graphic 68021 Version 1.0

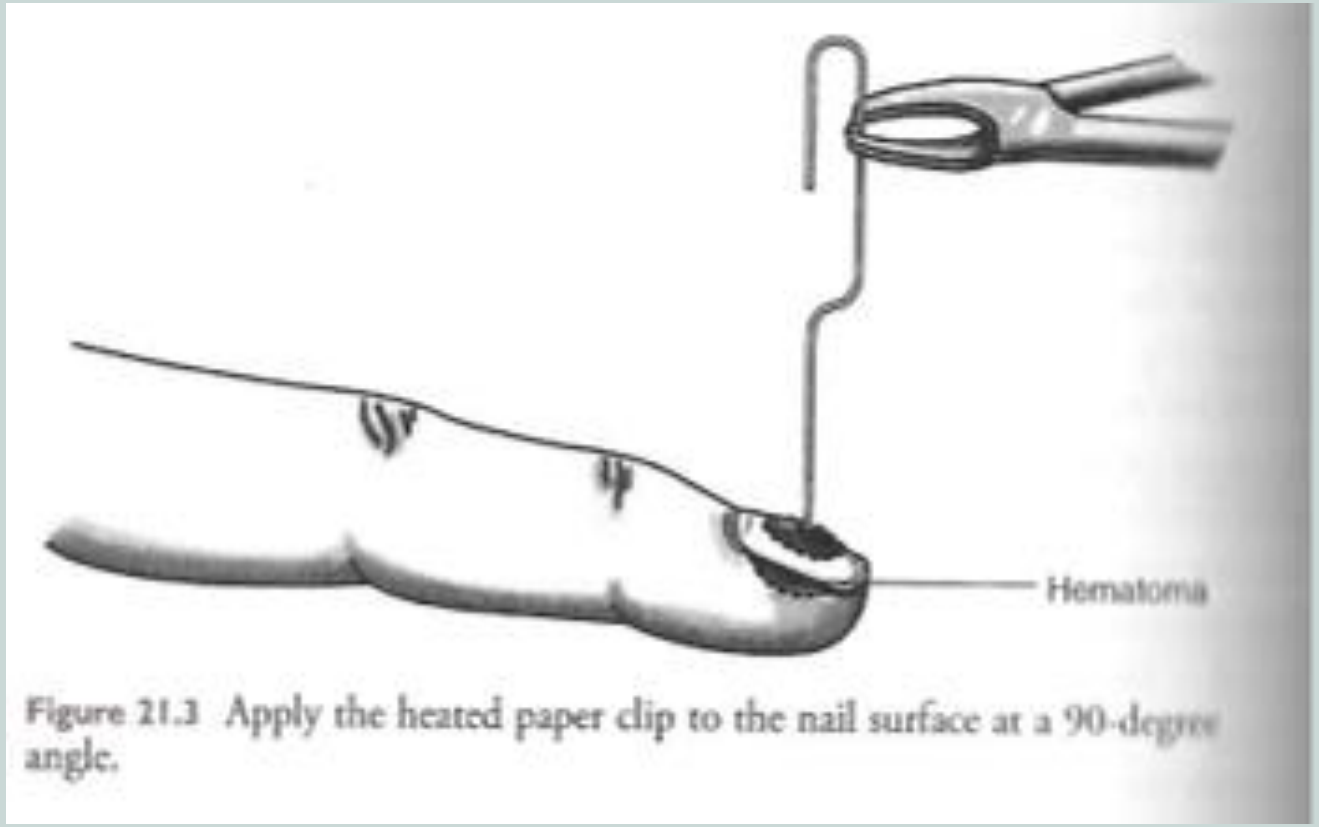
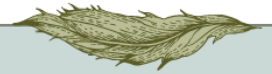


Figure 21.3 Apply the heated paper clip to the nail surface at a 90-degree angle.

Colyar (2020)

Follow-Up Care



- Ice and elevate area x 24 hours
- Soak BID-TID for 3 to 5 days
- Return if worsening pain, signs of infection (local or systemic), change in sensation
- Acetaminophen x 24 hours; then can use NSAIDs
- Consider using a finger protector
- Immunize with tetanus booster if > 5 years

Incision & Drainage of Abscess

Abscess

- Collection of purulent material in the cutaneous tissue which results in a painful, erythematous, fluctuant mass
- Indications for incision and drainage
  - Decrease the pain associated with abscess formation and minimize damage to adjacent tissue
- Precautions/Contraindications
  - Immunocompromised clients
  - Facial, palmar, breast, peri-urethral, perirectal abscess
  - Uncontrolled diabetes
  - Deep foreign body
  - Tense, non-fluctuant or pulsatile lesion
  - Abscess over joint
  - Abscess >5 cm

Equipment

- Antiseptic skin cleanser
- Sterile drape and gloves
- Gown, mask, goggles or face shield
- 1-2% lidocaine with or without epi
- 3-10cc syringe with 27-30g ½” needle
- #11 scalpel blade
- Culture swab(s)
- Tissue forceps; curved hemostat; sterile scissors
- Irrigating syringe and normal saline
- Gauze 4 x 4’s; Packing gauze; Tape

Procedure

- Position client with abscess easily accessible
- Measure abscess and surrounding erythema
- Apply glasses, gown, and gloves
- Prep 3” area surrounding abscess with antiseptic skin cleanser
- Anesthetize area; perform a field block
- Change into sterile gloves; have sterile equipment ready
- Incise abscess with #11 scalpel and obtain culture (swab in the wound)
- Explore cavity with hemostats to break down sacs or septa
- Irrigate with normal saline
- Pack if indicated, leaving a wick
- Dress wound using dry gauze

Procedure

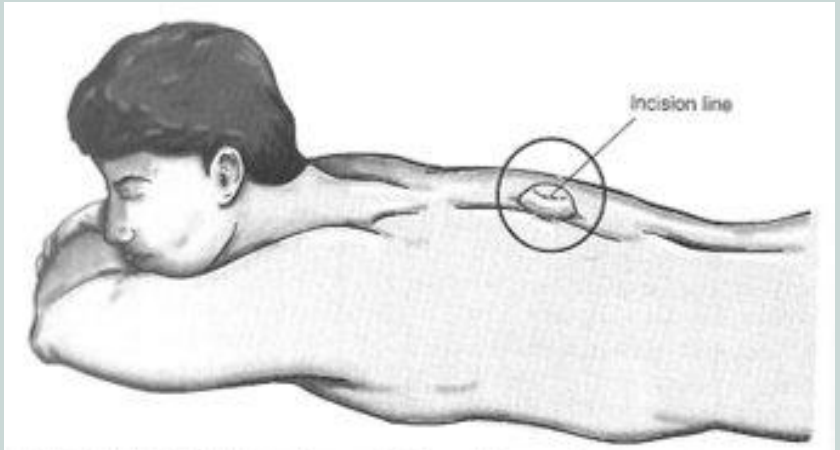


Figure 4.1 Incise the abscess deep and wide to allow easy drainage and to prevent premature closure.

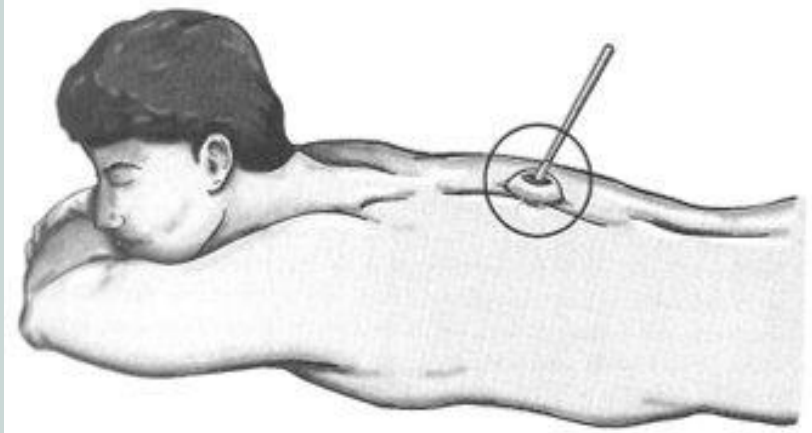


Figure 4.2 Obtain a culture from deep inside the wound cavity.

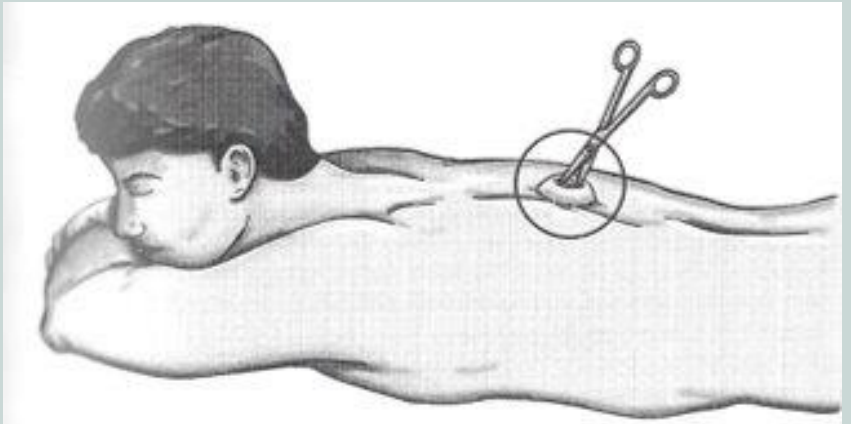


Figure 4.3 Break down any sacs or septa using hemostats.

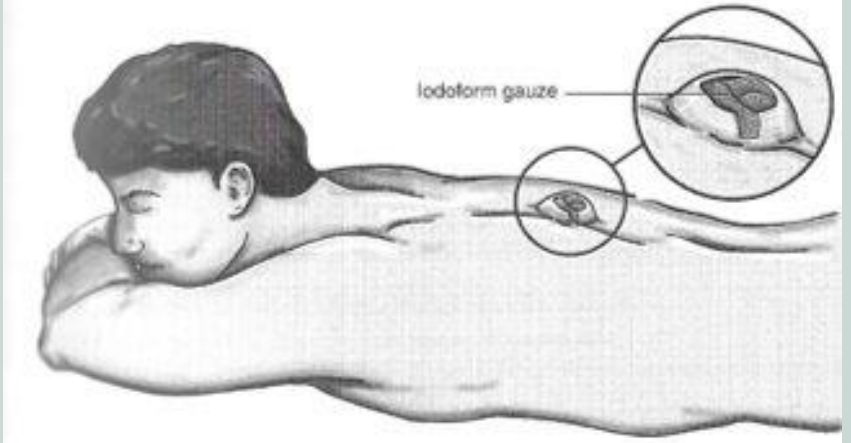


Figure 4.4 Pack the wound with iodoform gauze, leaving a small amount protruding from the wound.

(Colyar, 2020)

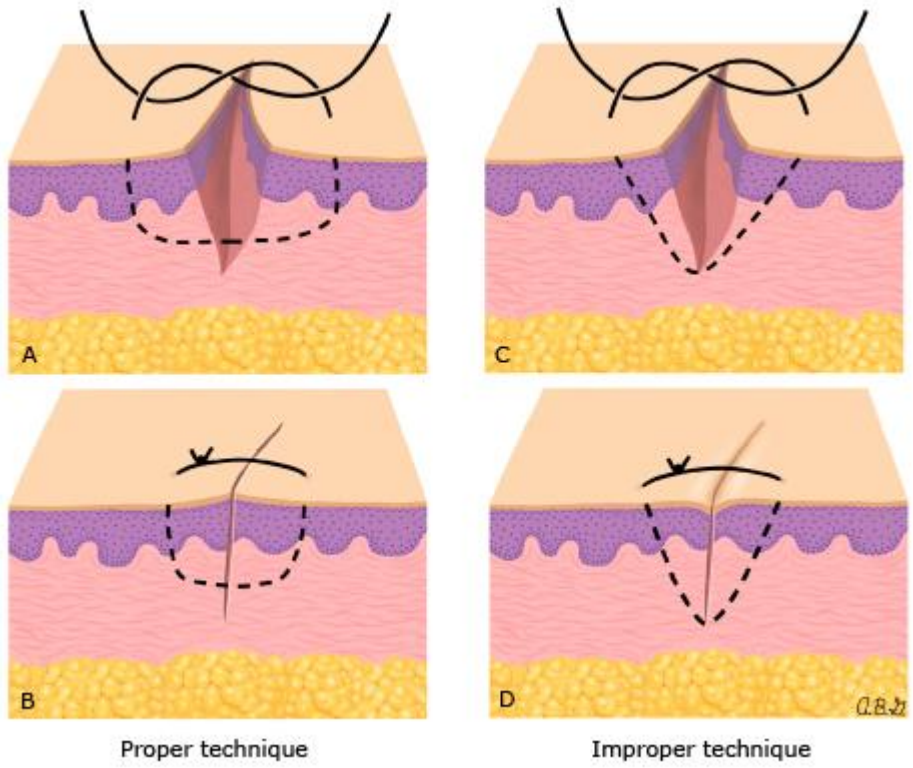
Follow-up Care

- Tetanus prophylaxis if needed
- At home wound care
  - Clean, dry dressing; change as needed
  - Packing: educate patient not to remove
- Return in 24-48 hours for wound check, packing change if needed
- Call if increasing pain, malodorous drainage, redness, or fever
- If no signs of cellulitis and not high risk, I&D is treatment
- Antibiotics: dicloxacillin, cephalexin; doxycycline, sulfamethoxazole/trimethoprim, clindamycin
- Acetaminophen x 24 hours; then NSAIDs

Basic Wound Closure

Evaluation and Assessment

- Eliminate dead space
  - Prevent hematoma
- Control bleeding
- Initial Assessment of Wound
  - Injury information
    - Document type, time & place of injury, size/length
  - Assess for
    - Foreign bodies
    - Deep tissue layer damage
    - Injury to nerve, vessels, or tendons
    - X-ray to check for glass or metal



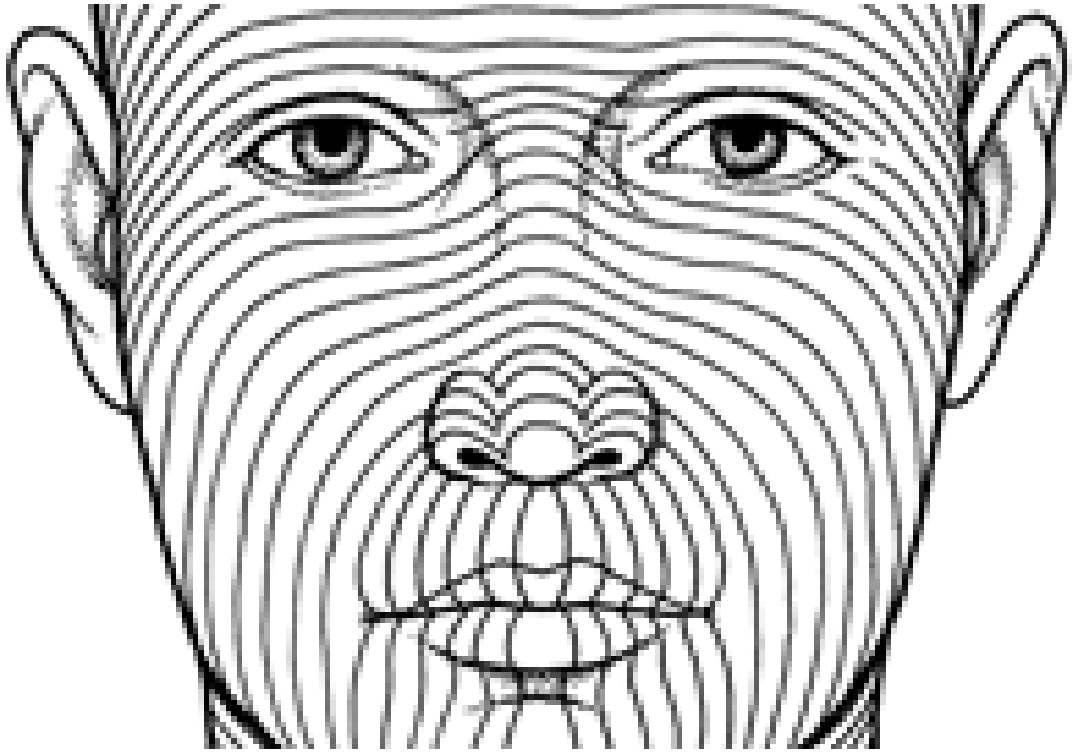
Graphic 74454 Version 5.0

Infection Risk

- Update tetanus vaccination
- Coexisting conditions
  - DM, PVD, immunocompromised
- Location of wound
  - Mouth, genitalia, digits
- Contamination
- Method of wound injury
  - Deep puncture, bite, possible foreign body
- Crushing injury, penetrating wound, open fracture
  - 10-fold risk

Wound Closure

- Accurately approximate tissue with minimal skin tension and distortion
- May close wounds up to 18 hours after injury
- Facial/head wounds can be closed up to 24 hours after injury
- Wound irrigation is key in avoiding infection
- Wounds at risk for infection should be closed loosely or consider delayed closure



Method	Wound selection*	Wound with actively oozing blood	Use for wounds in hair or near moist regions of the body (eg, axilla, perineum)	Use if wound under tension (eg, hands, feet, or over joints)	Use in patients with conditions associated with poor healing[¶]	Pain of repair	Speed of closure	Difficulty of technique
Sutures	Any laceration through the dermis, especially wounds that require careful wound approximation (eg, vermillion border)	Yes	Yes	Yes	Yes	+++	Slower	+++
Staples	Scalp wounds, wounds in noncosmetic areas, especially long, linear wounds	Yes	Yes	Yes	Yes	+++	Fast	++
Tissue adhesives	Linear wounds under low tension, skin tears and flaps in patients with fragile skin (eg, older adults)	No	No[Δ]	No[◇]	Yes	None/+	Fast	+
Wound-closure tapes	Linear, low-tension lacerations, skin tears and flaps in patients with fragile skin (eg, older adults)	No	No	No	Yes	None/+	Fast	+

Closure Using Sutures

Equipment

PPE

- Sterile surgical gloves (clean surgical gloves if sterile not available)
- Surgical mask
- Goggles or face shield
- Clean surgical gown

Anesthesia

- Local anesthetic
- 3cc syringe with narrow gauge needle

Irrigation

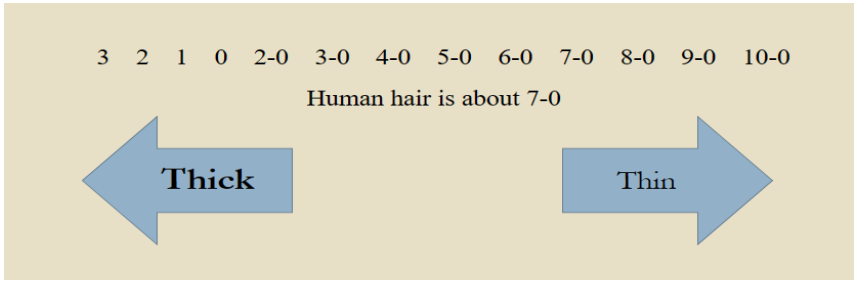
- Irrigation solution
  - Sterile isotonic saline or tap water
- 60 cc syringe with 18-gauge needle or prepackaged pressurized saline wound wash product

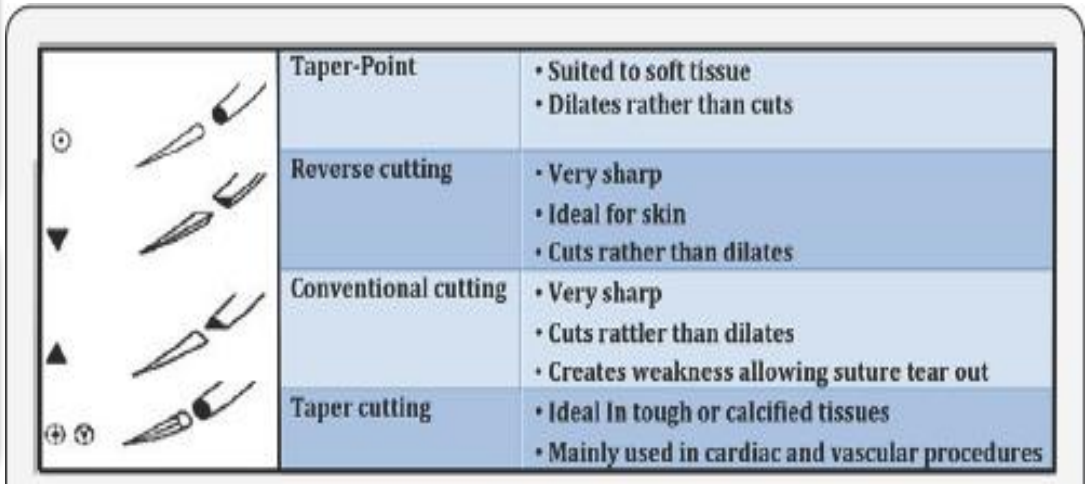
Equipment

- Suture tray containing:
  - Sterile field drapes
  - Needle holder (size appropriate to suture being used)
  - Atraumatic tissue forceps or skin hooks
  - Scissors (for cutting suture and wound modification)
  - Hemostats (if ligating bleeding vessels)
  - Sterile cotton swab or surgical probe
  - Sterile gauze
- Suture of choice

Quick Summary of Suture Types

Absorbable					Non-absorbable		
Braided	Monofilament				Braided	Monofilament	
Vicryl	Vicryl rapide	Monocryl	Fast absorbing gut	Chromic gut	Ethibond	Silk	Ethilon

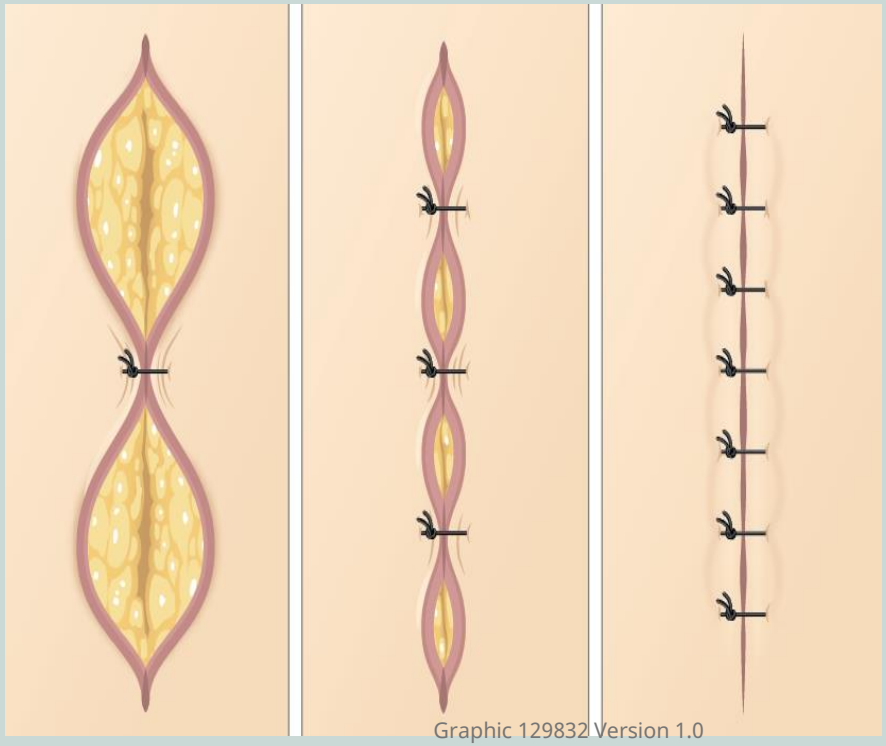




Taper-Point	• Suited to soft tissue • Dilates rather than cuts
Reverse cutting	• Very sharp • Ideal for skin • Cuts rather than dilates
Conventional cutting	• Very sharp • Cuts rattler than dilates • Creates weakness allowing suture tear out
Taper cutting	• Ideal In tough or calcified tissues • Mainly used in cardiac and vascular procedures

Suture Placement/Knot Tying

- Needle should penetrate skin surface at 90° angle
- Suture loop should be at least as wide or wider at the base than at the skin surface
- Width and depth of the suture loop should be same on both sides of wound
- Suture is tied using surgeon's knot (nonabsorbable suture) or a square knot (absorbable suture)
- Number of ties is determined by suture type
  - 3-4 ties for an absorbable suture
  - 4-5 ties for a synthetic nonabsorbable suture.
- Once tied, knot is positioned to one side or the other of the wound so that knot does not interfere with wound healing at the margin



SIM*VIVO instrument tie
https://www.youtube.com/watch?v=wbpQhiNDxvo

http://www.youtube.com/watch?v=6P0rYS6LeZw

http://www.youtube.com/watch?v=PFQ5-tquFqY

Closure Using Staples

Closure Using Staples

Equipment	Sterile gloves for the provider
	Sterile 4x4 inch gauze, tubular gauze bandage, and tape for dressing
	Sterile drapes
	Irrigation solution
	30 to 60 mL syringe with 18-19g IV catheter or irrigation device with splash shield
	Staple device
	Adson forceps (forceps with teeth)
	Antibiotic ointment
	Staple remover

Closure Using Staples

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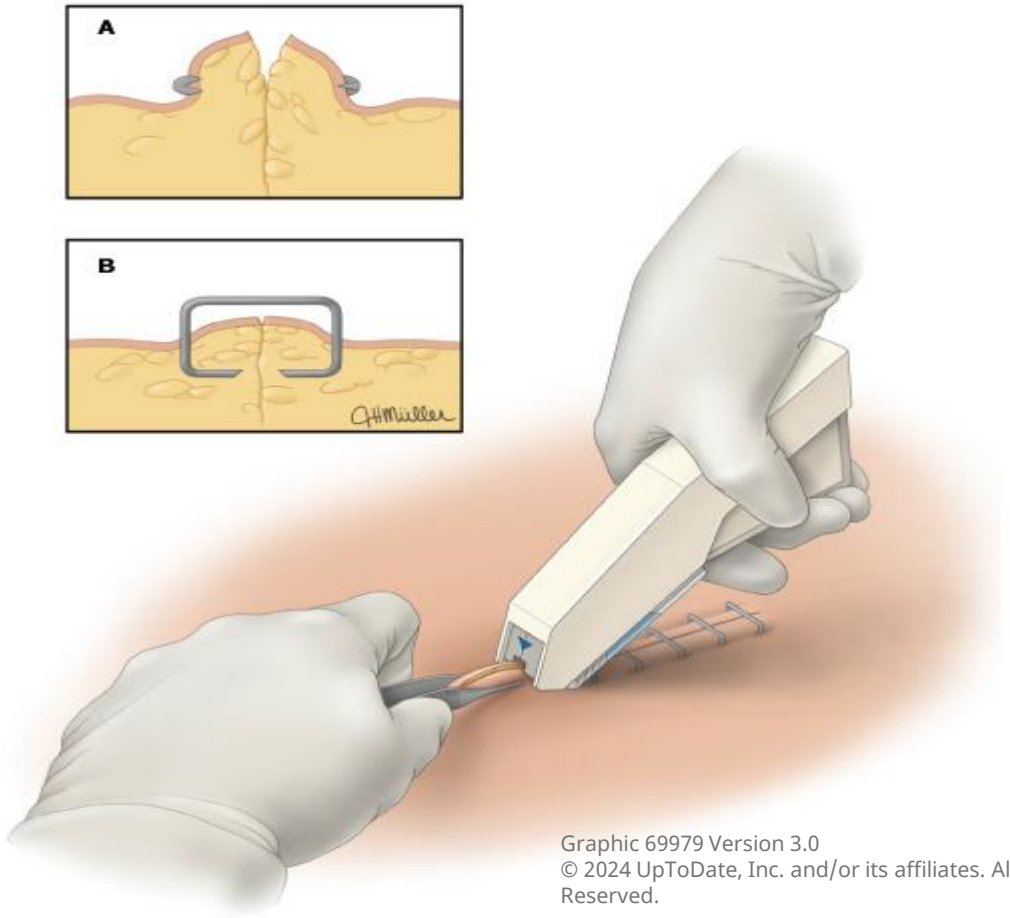


- Place stapler perpendicular to and centered over wound while everting the wound edges with forceps (preferable) or thumb and forefinger
- While pinching edges of the wound together, gently squeeze stapler handle to eject staple into skin
  - If stapler does not automatically release, release staple by pulling the stapler back
- When properly placed, crossbar of staple is elevated a few millimeters above skin surface

Aftercare and Removal

- Document number of closures placed
- Apply clean dressing with thin layer of antibiotic ointment
- Instruct patient to keep dressing on for 24 hours, then remove; may shower and pat dry
- Do not soak in a tub or swim, etc. for 7-10 days
- Do not use peroxide or iodine on the wound
- After 24 hours, keep site open to air as much as possible; cover if potential for contamination
- Antibiotic ointment versus oral antibiotics
- Return sooner for signs of infection

Face and Neck	5 days
Scalp	7-10 days
Upper Extremities, Trunk	7 days
Lower Extremities	8-10 days
Digits, Palm, Sole	10-14 days

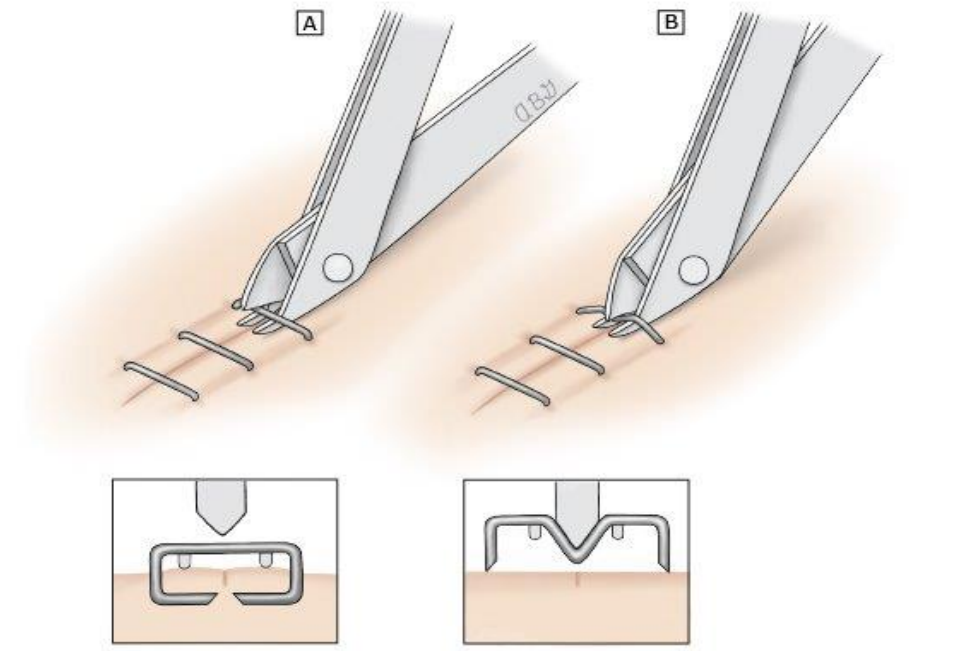
Suture Removal

- May use suture removal kit
- Some kits have plastic tweezers, or metal tweezers without teeth
- Scissor blades are approx. 1-2mm wide, can be difficult to get underneath sutures
- In these cases, consider using #11 scalpel to cut sutures
- Grasp knot of suture with tweezers, cut one side of suture close to the knot and gently pull to remove
- Refer to initial assessment for number of sutures placed, document how many were removed and how patient tolerates procedure

Staple Removal

- Use staple remover as indicated
- If the patient is following up elsewhere for staple removal, provide a staple remover to the patient to ensure that the follow-up provider has the proper equipment
- Refer to initial assessment for number of staples placed, document how many were removed and how patient tolerates procedure

Skin staple removal

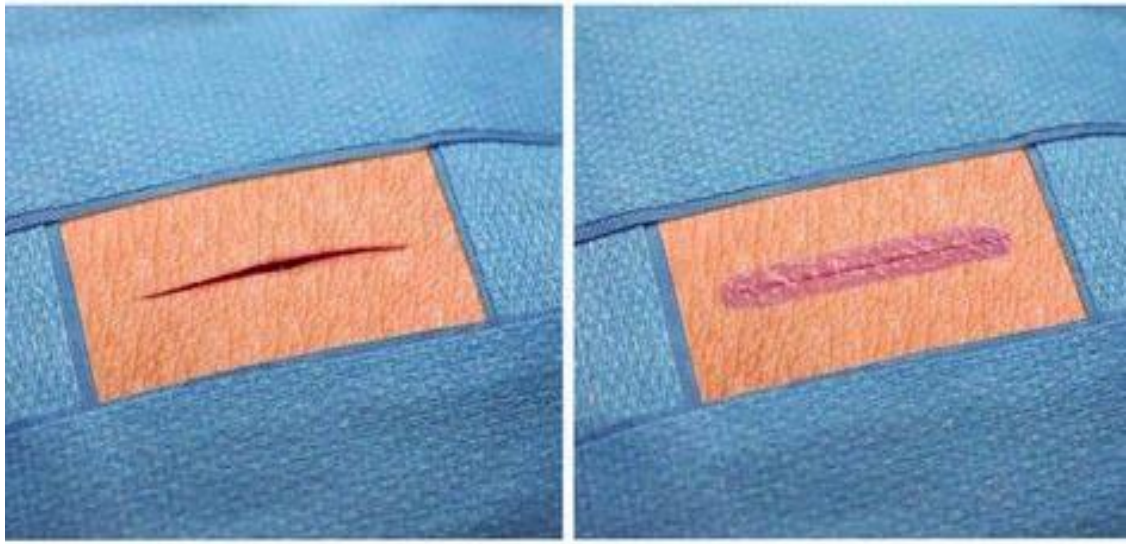


(A) Place both jaws of the skin staple remover symmetrically under the staple.
(B) Depress the handle which unbends the staple and permits removal.

Closure Using Adhesives

Tissue Adhesives

- Best for clean wounds that do not require anesthesia
- Great for pediatric patients
- Disadvantages: Expensive
- Do not use for wounds that are
  - Over joints
  - > 3 cm deep
  - Irregular or jagged
  - High risk for infection

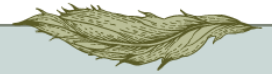


https://www.shopwoundcare.com/p-medline-skin-affix-topical-skin-adhesive-applicator.html?msclkid=b7bcf4a221b81bdd303d915ed8669078&utm_source=bing&utm_medium=cpc&utm_campaign=Wound%20Care%20Supplies%20Shopping&utm_term=4579122337069121&utm_content=Medline%20Industries%20Wound%20Preps

Equipment

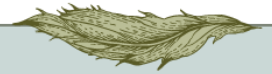
- Sterile gloves
- Sterile 4x4 gauze
- Sterile drapes
- Irrigation solution (eg, sterile normal saline or clean tap water
- Tissue adhesive (Dermabond, Surgiseal)
- Toothed tissue forceps for wound approximation during the procedure (optional)

Procedure



- Remove tissue that extrudes through the wound or hair that overlies the wound
- Ensure skin adjacent to the wound is completely dry
- Appose or attempt to evert the wound edges using gloved fingers or tissue forceps
- Warn patients that they may feel a sensation of warmth
- Crush the vial to begin the polymerization process, then squeeze the vial to force the adhesive to permeate the foam-tip applicator
- Once tip is saturated, swipe it gently over the wound edges in a single motion, spreading a thin film over them

Procedure



- Briefly remove the operator's hand (or forceps, if used) from the skin before the glue polymerizes
- Allow adhesive to dry for 30 to 40 seconds to permit complete polymerization while continuing to hold the wound edges together
  - First layer reaches full tensile strength in approx two minutes
  - If wound edges are not well aligned after first application, wipe away adhesive with gauze within 10 seconds
  - Application of antibiotic ointment or petroleum jelly for 30 minutes will allow removal of the polymer if the glue has already hardened
- Repeat application process 3-4 times in oval pattern around the wound to encompass greater surface area
- Enhance wound-closure strength by extending the application 5 to 10 mm beyond the margin of the incision
- Do not touch the repaired wound until complete drying has occurred

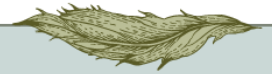
Closure Using Tapes

Indications & Equipment

- Indications
  - Linear, low-tension lacerations, skin tears and flaps in patients with fragile skin
- Equipment
  - Steri strip – 1/8", ¼", ½"
  - Scissors
  - Tweezers or forceps
  - Benzoin or skin glue

https://cdn.shopify.com/s/files/1/0298/2605/6240/products/steri-strips-22054900859058_400x.jpg?v=1606216553

Procedure



- Measure length of strip needed
  - Leave approx. 2cm on each side of the skin edge
- Cleanse wound; approximate wound edges
- Place strips one at a time
- Tapes stay in place for several days and should be allowed to fall off on their own
- Do not apply topical antibiotic
- Can use skin glue/benzoin to help strips stay in place for longer period

Closure Using Gelatin Matrix

Gelatin Matrix

- Absorbs blood or fluid up to 40x its weight and expands up to 200% in its dimensions
- Use for skin avulsion injuries without infection
- Usually absorbed completely within 4 to 6 weeks without inducing excessive scar tissue
- Use only the minimum amount, cut to appropriate size necessary to produce hemostasis
- Cleanse wound; Cut foam to desired size and apply with pressure directly to the bleeding site using sterile gloves or forceps
- Can apply dry or moisten with sterile saline

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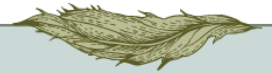
After Care



- Tapes: document number of strips used
- Keep open to air as much as possible
- Do not soak in a tub or swim, etc. until closure has fallen off or dissolved
- Do not use peroxide or iodine on the wound
- Do not apply topical antibiotic to site
- All closure types, including sutures and staples:
  - Avoid activities that could cause wound to dehisce
  - Limit sun exposure for first 6 months after site is healed

How Would You Close This Wound?

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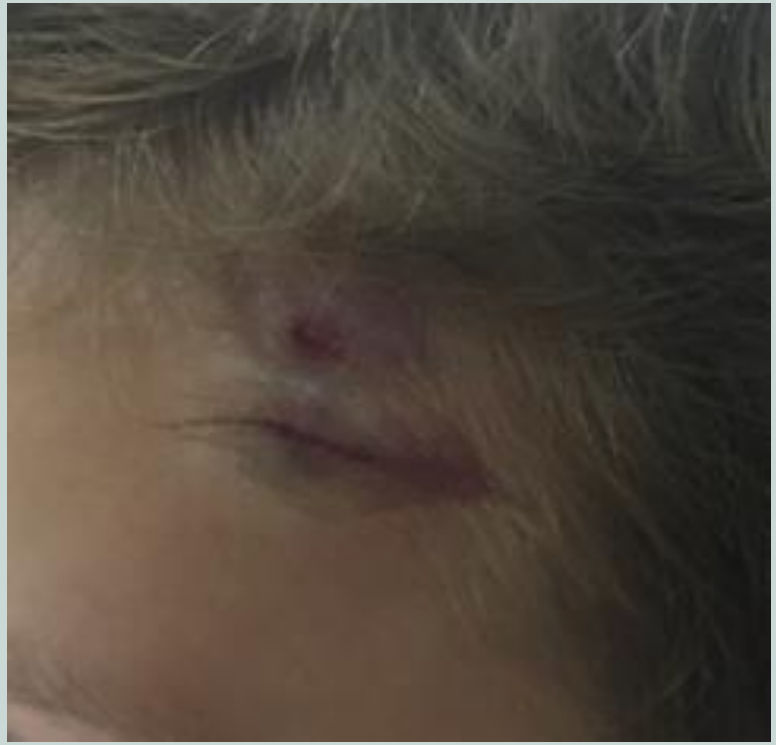

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Thank You