

## Care and Treatment Plan: Corneal Abrasion – *Adult and Pediatric*

### Definition

A minor abrasion is a superficial corneal defect due to scraping or rubbing of the corneal epithelium. Corneal abrasions occur in any situation that causes epithelial compromise.

Registered Nurses with **Remote Nursing** or **RN First Call** Certified Practice designation (RN(C)) are authorized to manage, diagnose, and treat adults and children with corneal abrasions who are **2 years of age and older**.

### Management and Intervention

#### Goals of Treatment

- Preserve vision
- Prevent secondary bacterial infection
- Prevent development of corneal ulceration
- Pain management

#### Non-pharmacologic Intervention

- Copious irrigation with saline for any foreign body to promote removal
- Do not use contact lens until abrasion healed and antibiotic treatment is finished
- Patching is contra-indicated unless advised by a physician or nurse practitioner

#### Pharmacologic Intervention

- *Note:* The amount of anesthetic used should be minimal, as these agents have been shown to slow wound healing.
- Instill topical anesthetic eye drop:
  - Tetracaine 0.5% eye solution (pontocaine) 2 drops stat dose only
- *Note:* The client should not be discharged with topical anesthetics for pain control as they can be toxic to the epithelium and retard healing, increasing the risk of infections and scarring
- Complaints of irritation and foreign-body sensation should resolve in 1 or 2 minutes
- Instil a generous amount of eye lubricant in the lower conjunctival sac
- Analgesics for mild to moderate pain for adults:
  - Acetaminophen 325mg, 1-2 tabs PO q4-6h PRN, or
  - Ibuprofen 200mg, 1-2 tabs PO q4-6h PRN
- *Note:* Corneal abrasions should never be treated with topical steroids as they slow healing and increase the risk of superinfection.
- *Note:* Tetanus prophylaxis is not recommended unless there is a penetrating injury into the eye, chemical burn, devitalized tissue, or trauma from contaminated material.

#### Additional Pediatric Considerations

- Analgesics for mild to moderate pain for pediatrics:
  - Acetaminophen
  - Ibuprofen
- Weight required for all drug calculations
- Pediatric doses should not exceed recommended adult doses

### **Pregnant Women (same dosing as above)**

- Eye lubricant and acetaminophen may be used as listed above
- Tetracaine may be used after consulting a physician or nurse practitioner.
- **Do not use** Ibuprofen.

### **Breastfeeding Women (same dosing as above)**

- Eye lubricant and acetaminophen may be used as listed above
- Tetracaine may be used after consulting a physician or nurse practitioner
- Ibuprofen may be used after consulting a physician or nurse practitioner

### **Potential Complications**

- Corneal ulceration
- Secondary bacterial infection
- Corneal scarring if abrasion recurs
- Uveitis
- Iritis

### **Client/Guarding Education/Discharge Information**

- Advise on condition, timeline of treatment and expected course of disease process.
- Advise client that daily follow-up is important to ensure proper healing.
- Counsel client/guarding about appropriate use of medications (type, dose, frequency, side effects).
- Counsel client/guarding about when they should return back to work or school.
- Instruct client/guarding to return to clinic immediately if pain increases, if vision changes before 24-hour follow-up and if any signs of infection appear including swelling, discharge, or increased redness.
- Client should return if there are changes such as flashes of light, floaters, a dark veil or vision loss.
- Suggest that client wear protective glasses while working or participating in contact sports, to help prevent similar incidents in future.
- Do not wear contact lens(es) until healed.

### **Monitoring and Follow-up**

- Follow-up at 24 hours to assess healing is imperative.
- If no symptoms or signs, client can be sent home with advice on preventing corneal abrasions.
- If the client is still symptomatic but improving, then the eye should be re-treated as above with lubricant and re-examined daily with fluorescein. The uptake of dye should be less than on the previous day. Re-examine daily until the abrasion has healed completely.

### **Additional Pediatric Considerations**

- Advise caregiver to follow-up if condition does not improve, deteriorates and for on-going monitoring as necessary. Follow-up at 24 hours to assess healing is imperative.
- Daily visual acuity test until recovered.

### **Consultation and/or Referral**

- Consult a physician or nurse practitioner if:
  - the abrasion is greater than 4mm

- the abrasion is located in the center of the cornea
- a penetrating corneal ulcer is found on initial examination
- pain is severe
- pupils are not round
- the abrasion is larger after 24 hours
- a residual rust ring is evident
- there is significant worsening of vision

### ***Additional Pediatric Considerations***

- Child is under 2 years of age
- Referral to an optometrist, nurse practitioner or physician is required within 24 hours for large or central defects and in 48-72 hours if there is no response to therapy.

### **Documentation**

- According to agency policy

## References

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