- There are 3 clinical scenarios where rhabdomyolysis is a real concern.
    - Traumatic/compression (such as a crush injury)
    - Non-traumatic exertional (such as the patient who does excessive squats)
    - Non-traumatic, non-exertional (such as toxins, venom, sustained muscle activity, untreated status epilepticus, or PCP agitation)
- Treatment of rhabdomyolysis is fluids.
    - Administer intravenous fluids if moderate to severe rhabdomyolysis with a goal of high urine output, and oral fluids if mild.

Related Content

EMA 2021 February: Abstract 24: Routine Screening Laboratory Tests for Psychiatric Admission

EMA 2013 June: Abstract 4: Drug Screens For Psychiatric Patients In The Emergency Department: Evaluation And Recommendations

EMA 2016 April: Down The Rabbit Hole: Emergency Department Medical Clearance Of Patients With Psychiatric Or Behavioral Emergencies

References

https://www.acep.org/patient-care/clinical-policies/Psychiatric-Patient/

Critical Care Mailbag: Tracheostomy Complications

Scott Weingart and Anand Swaminathan

- Tracheostomy emergencies fall into two categories: airway related (trach fracture, trach displacement, trach obstruction) and bleeding related.
- Tracheostomy replacement:
    - Tracheostomy track maturation occurs 7-10 days after placement.
    - Replacement of a tracheostomy with a mature track can be done blindly, assisted by a bougie, or with assisted by flexible endoscopy.
    - If the track is immature, tracheostomy can still be replaced, but with caution.
        - The safest way is to use a flexible endoscope for visualization prior to placing the airway.
        - Use a bougie or an airway exchanger for tactile feedback.
        - If there is trouble passing the tracheostomy over an airway exchange device, then downsize the tracheostomy or use an endotracheal tube.
- Respiratory distress:
    - This may be due to a tracheostomy issue or a lung issue.

    - Apply 100% oxygen to the patient's face and the tracheostomy.
        - Use a pediatric mask or an LMA over the stoma.
    - Take out the inner cannula which may be clogged. (Don't throw it away!)
    - Attach $EtCO_2$ to confirm there is a patent airway (or pass a suction catheter).
        - If unable to confirm patency, remove the tracheostomy.
        - If the patient is stable try to manipulate the tracheostomy to position it correctly or use a scope to visualize the location.
    - If the tracheostomy **is** patent:
        - This may not be a tracheostomy complication. Consider alternative causes.
        - If positive pressure ventilation is needed and the tracheostomy is uncuffed, replace it with a cuffed tube.
    - If the tracheostomy is **not** patent:
        - These steps are for patients with tracheostomies without laryngectomy.
        - Pull the tracheostomy and be prepared to manage the airway.
            - Use caution - they may have a tracheostomy because of a difficult airway.
            - Can consider oropharyngeal intubation.
        - Preoxygenate using a pediatric BVM or a small LMA over the stoma.
            - Do this while holding the mouth and nose closed, or use a regular BVM with a peep valve attached over the nose and mouth.
            - You can bag from above while occluding the stoma as well.
- Bleeding complications:
    - Tracheoinnominate fistulas are rare but must be considered.
    - Typically presents 3 days to 6 weeks after placement.
    - **Significant hemorrhage is often preceded by a "herald bleed."**
        - A small venous ooze outside of the six-week window is unlikely to be a herald bleed.
    - If available, let the service who placed the tracheostomy know the patient is in the ED for them to evaluate and help with management.
    - Copious bleeding:
        - Place a cuffed tracheostomy if the patient has an uncuffed tracheostomy in place.
            - An alternative would be to intubate from above with a cuffed tube (do not remove the tracheostomy tube until the ET tube is placed).
        - Hyperinflate the cuff until the pilot balloon is rigid. This can tamponade bleeding as a temporary measure.

- Direct tamponade should be performed if hyperinflating the cuff does not stop bleeding.
  - Steps to perform:
    - Place a finger into the stoma.
    - Bluntly dissect anterior to the trachea.
    - Apply pressure anteriorly to the innominate artery.
- Herald bleed: reported bleeding now resolved.
  - Let the proceduralist who placed the tracheostomy know the patient is back.
  - Bronchoscopy may find evidence of bleeding.
  - CTA may find bleeding but this is not a proven diagnostic modality.
  - If you do not have consultants, consider pulling the tracheostomy to look for skin bleeding or perform a scope yourself if competent.

Related content
CorePendium: Complications of Tracheostomies
https://www.emrap.org/corependium/chapter/reckOdDn9Ljn7sBLy/Complications-of-Tracheostomies

Pediatric Pearls: Asthma Smackdown – Part 1 and Part 2

Ilene Claudius, Al Sacchetti, and Jeff Seiden

- Round 1 smackdown was back in October 2021 when Al and Jeff did a pediatric fever smackdown.
- "Kitchen sink" of medication treatments: nebulized treatments
  - Beta agonist (albuterol), anticholinergic, subQ/IM epinephrine, steroids IV, magnesium.
  - Be aggressive up front. Don't wait around for the child to decompensate.
  - Using an autoinjector of epinephrine is the safest route of administration.
  - Parenteral terbutaline (not infusion). Small bolus doses can help temporize.
  - Terbutaline and epinephrine is 0.01 mg/kg IM up to max dose of 0.4mg (0.15mg or 0.3mg is the autoinjector dose).
  - Magnesium dose (IV): 50mg/kg, max 2g (dose range 25-75 mg/kg per dose), give over 20 minutes.