4. Cuff may need to be inflated to provide adequate oxygenation and ventilation when positive pressure ventilation is required. However, cuff should never be inflated if positive pressure ventilation is not being performed, or in patients with a Passy-Muir (teal colored) speaking valve in place

Patient Safety Considerations

1. Especially in pediatric tracheostomy patients with significant respiratory distress, plugging or dislodgement of the tracheostomy is the problem until proven otherwise. Signs and symptoms of respiratory distress, cyanosis, ventilator alarms sounding, decreased level of consciousness, decreased SpO_2 or cardiac arrest in patients with a tracheostomy, as well as bradycardia in pediatric tracheostomy patients should be presumed due to a tracheostomy obstruction
2. Laryngectomy patients and some patients with congenital or surgical airway abnormalities cannot be orally intubated. Patients with tracheostomy alone (e.g., for mechanical ventilation) and no airway abnormalities should be able to be orally intubated
3. For recent tracheostomy patients who present with bleeding from the tracheostomy in the early (up to 3 weeks) postoperative period, a tracheoinnominate arterial bleed is an uncommon and life-threatening complication (0.7% incidence and a 90% mortality rate)
    a. 50% of these patients present initially with a smaller sentinel bleed/hemoptysis which appears to have stopped
    b. Inflation of the tracheostomy balloon to the maximum is a potential temporizing measure until definitive care can be provided, even overinflation may be needed. If the tracheostomy is uncuffed, it can be replaced with a cuffed endotracheal tube and the balloon maximally inflated
    c. Any patient in the early postoperative period (within a month of surgery) with hemoptysis or bleeding from a tracheostomy should be transported for evaluation, even if bleeding has stopped
4. Prompt tracheostomy replacement is important. Delays allow for narrowing of the stoma and can make recannulation more difficult

Notes/Educational Pearls

Key Considerations

1. Tracheostomy tube components
    a. Outer cannula: the tracheostomy size is stamped on the collar
    b. Inner cannula: not found in all tracheostomies
        i. Not commonly used in pediatric patients
        ii. Removed by gently twisting a quarter turn to the left and pulling out
    c. Balloon cuff: protects lower airway from secretions/blood from above, allows for better mechanical ventilation
    d. Collar: includes imprint of tube size and attachment for umbilical tape/tracheostomy ties
    e. Obturator: stiffens and provides shape to tracheostomy tube to facilitate insertion. Must be removed for ventilation
2. To determine the appropriate size suction catheter, double the size of the tracheostomy (number on collar of tracheostomy tube)
3. A bougie may aid in the placement of an endotracheal tube into a mature stoma
4. An inner cannula may be required to ventilate through the tracheostomy tube