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| **Case Title** | Upper Airway Obstruction |
| **Scenario Name** | Upper Airway Obstruction |

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| **Learning Objectives -** [**Use action words**](http://ubccpd.ca/sites/ubccpd.ca/files/Accreditation_Learning%20Objectives_%20Verbs.pdf) | |
| **Knowledge:**   1. Review the differential diagnosis of stridor 2. Review the treatment of croup 3. Review indications for racemic epinephrine for croup 4. Describe the dangers of intubating a patient with impending airway obstruction 5. Recognize options for airway management if intubation fails | |
| **Skills:**   1. Recognize and demonstrate the need for intubation in a stridorous patient 2. Review and demonstrate the technique for needle cricothyroidotomy | |
| **Attitude/Behaviours:**   1. Demonstrate Team skills 2. Demonstrate Situational awareness 3. Demonstrate Graded Assertiveness | |
| **Scenario Environment** | |
| **Location** | ED |
| **Monitors** | Bedside |
| **Props/Equipment** | CXR  Equipment for needle cric and jet ventilation  Handout for Needle Cricothyroidotomy |
| **Make-up/Moulage** |  |
| **Potential Distractors** |  |

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| **Case Introduction:** |
| 3 year old boy presents to ER. Previously well - cough and difficulty breathing today. Febrile; initial sat at triage = 97% RA |

| **Patient Parameters** | **Effective Management** | **Notes** |
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| **Phase 1: Presentation**  **Condition:** Moderate-severe resp distress, upset  **Initial Assessment**   * **Heart Rhythm:** Sinus * **HR:** 130 * **BP:** 90/50 * **RR:** 30 * **SP02:** 97% RA * **T:** 39 * **CNS:** awake and alert * **Chest:** Stridor. Poor a/e bilaterally * **CVS:** pulses strong, CR 2 secs * **Weight:** 14 kg | * **Take a focused history** (see Notes column) * **Medical Management** * Attempts to keep child calm * Apply monitors * Apply O2 (100%) * Get anesthesia bag or self inflating bag ready * Gives racemic epinephrine x 1 * Give dex * IV access | 1. **Focused history**  * Was playing at the playground yesterday afternoon with other children (?FB ingestion) * At night, started to cough * This morning, cough worsened and child began having difficulty breathing   **PMHx**   * Healthy   **Meds**   * Nil   **Allergies**   * NKA   **Airway**   * Child markedly stridorous * Attempts to keep child calm   **Breathing**   * Auscultate chest and observe RR * Oxygen sat   **Circulation**   * Assess pulse, HR, cap refill, BP |
| **Phase 2: Persistant Stridor**  **Condition:** Persistant stridor. Coughing. Resp distress. Sats dropping  **Physical Examination**   * **Heart Rhythm:** Sinus * **HR:** 130 * **BP:** 90/50 * **RR:** 30 * **SP02:** 93% RA * **T:** 39 * **CNS:** Crying. Anxious * **Chest:**Marked stridor**.** Poor a/e bilaterally | 1. **Patient Reassessment** (see Notes column) 2. **Medical Management**  * Call for help from RT and/or anesthesia * Give another epinephrine * Get anesthesia bag or self inflating bag ready * Gets intubation equipment ready * Obtain IV access * Give IV steroids | 1. **Patient Reassessment**   **Airway**   * Suction the airway * Reposition the head with head tilt, chin lift, jaw thrust * Reapply oxygen mask   **Breathing**   * Reassess breathing and RR   **Circulation**   * Reassess HR, pulse, CR, BP |
| **Phase 3: Intubation**  **Condition:** Desaturates and is no longer moving air well. Stridor worsens. Swollen airway – difficult intubation  **Physical Examination**   * **Heart Rhythm:** Sinus * **HR:** 160 * **BP:** 110/55 * **RR:** 40 * **SP02:** 88% RA * **T:** 3 * **CNS:** drowsy, does not follow commands * **Chest:** Stridor. Swollen airway. Minimal air movement. Decr a/e t/o * **CVS:** well perfused, cap refill 2 secs | 1. **Patient Reassessment** (see Notes column) 2. **Medical Management**  * Starts to bag mask ventilate the patient at the appropriate rate * Prepares for intubation   + Preparation / Equipment   + Preoxygenation, RR 20 : ensure they are bagging at the appropriate rate   + Cricoid pressure   + Premedication : atropine 0.02 mg/kg   + Sedation : ketamine 1mg/kg boluses prn until sedated; Etomidate 0.3 mg/kg or midazolam 0.1 mg/kg and fentanyl 1mcg/kg   + Do NOT Paralyze in this situation   + Intubate with ETT 3.0 and use an introducer. Should be done with anesthesia present / helping | 1. **Patient Reassessment**   **Airway**   * Suction the airway * Reposition the head with head tilt, chin lift, jaw thrust   **Breathing**   * Reassess breathing and RR   **Circulation**   * Reassess HR, pulse, CR, BP |

**Insert more lines if more phases required.**

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| **Expected Patient Management** | **Debriefing Points** |
| 1. **Student** 2. **R1** 3. **Senior IM resident** |  |

**References:**