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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
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| **Skills:**1. Recognize and demonstrate the need for intubation in a stridorous patient
2. Review and demonstrate the technique for needle cricothyroidotomy
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| **Attitude/Behaviours:**1. Demonstrate Team skills
2. Demonstrate Situational awareness
3. Demonstrate Graded Assertiveness
 |
| **Scenario Environment** |
| **Location** | ED |
| **Monitors** | Bedside |
| **Props/Equipment** | CXREquipment for needle cric and jet ventilationHandout 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
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| **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
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| **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**
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**References:**