Infant Airway Scenario

General description

This is an infant airway scenario involving the need to assess the airway and respiratory system following a hot blast injury. It involves the need for good assessment skills, endotracheal intubation and ongoing ventilatory support. Initially looking reasonably well, followed by deterioration as airway oedema develops.

There is opportunity for supportive team working within a setting of the need for expeditious assessment and intervention.

This scenario is primarily an airway scenario and as such does not need to include difficulty with vascular access—a simple IV can be achieved readily, or this can be harder and require intraosseus access. The learners should have access to a Broselow tape for drug dosing etc.

A brief note on this scenario description

Vital signs are given as a guide. It is impossible, when writing a scenario, to predict how the scenario will progress, so please feel free to alter them, within reason, to fit the clinical situation. Changing vital signs should not be a way of playing games or 'punishing' actions.

Included are a few useful ‘resources’ on the bottom right side of the page that relate to this scenario. Also included are resources that provide interesting background information relating to airway care.

Last minute reminders

- Fun
- Fast
- No one 'on the spot' too much
- Never 'punish' an action
- It's about relationships and team working...and team success
- Foster group problem solving
- The written scenario is a 'guide'. The skilled facilitator will adjust it to fit clinical interventions, learners needs, emotion of the moment etc.....success is important!

Resources

- RSI resources in Critical Procedures at theCAREcourse.ca
- Tracheotomy resus.me/transtracheal-airways-in-kids-well-pigs-kids-anyway/
- Atropine (or not!) in infant RSI resus.me/atropine-for-paediatric-rsi/

Background (*read aloud at outset*)

Phoenix, age 7 months.

Was with his/her parents on a camping trip. The parents were sitting around the camp fire, with friends, at about 0100 and the baby was sleeping in a car seat next to the parents. There was alcohol being consumed. One of the group, who was drunk, threw gasoline from a can, on the fire to 'get it going better'. There was a blast of heat. Parents had singed hair, eyebrows and lashes.

The baby woke and cried immediately and seemed fine initially other than the crying.

The parents drove for about 30 minutes to get to the emergency dept / clinic to 'get the baby checked'.

Initial Vitals

Appears	**HR** 164	**BP** 84/56	**RR** 42 slight indrawing	**Temp** 36.4 ax	**O_2 Sat** 96% on air
	Eyes 4	**V**erbal 3	**M**otor 6		**Gluc** 4.3

Additional History (info given ***if*** participants ask)

Symptoms / Story **"What's going on?"**	Parents are worried because of the redness of Phoenix' face
Allergies	Nil known
Meds	Nil
Past Medical History	SVD at 40wks, 8 days. Observed for 24 hours on NICU for 'fast breathing' and 'not feeding well'
Last Meal	Solids at about 7pm Breast fed at 10pm
Events	As above

Initial Assessment

Parents somewhat distressed, concerned and tense.

Phoenix has a mildly red face (looks like sunburn). Front hair is mildly singed.

Airway—patent, no soot.

Breathing—slight indrawing, very soft stridor (if participants listen carefully).

Circulation—as per vitals, warm periphery.

Well-hydrated—moist mucous membranes, fontanelle not bulging or sunken.

Repeat Vitals (at about 5 mins)

Appears	**HR** 138	**BP** 72/44	**RR** 36 slight indrawing	**Temp** 36.3 ax	**O_2 Sat** 92% on O_2
	Eyes 4	**V**erbal 3	**M**otor 6		

Repeat Vitals (vary as appropriate in response to care provided)

Repeat Vitals (if intubated)

Appears	**HR** 144	**BP** 74/52	**RR** Ventilated	**Temp** 36.3 Ax	**O_2 Sat** 98%
	Eyes N/A	**V**erbal N/A	**M**otor N/A		

Developments (depending on the care provided)

1. Supporting ventilation with bag-valve-mask will help but gradually work less well as the airway swells. Similarly, attempted use of a supra-glottic airway device (LMA or King tube) will help initially but then start to fail.
2. Intubation will require drugs—anaesthetic agent and paralytic (without these the strong tongue and airway reflexes will prevent intubation). Pre-med with atropine, to avoid bradycardia is appropriate.
3. Intubation success is important—assist the learners, if necessary, to ensure that success.
4. Once intubation is achieved, move on to monitoring, bagging technique (rate, volume, and *smooth*).
5. Transport considerations, fluid and glucose management can also be included.

Learning opportunities

1. Team working, interpersonal communication and support.
2. Recognition of airway/breathing problem and the need for early intubation.
3. Process of intubation (pre-oxygenation, anaesthetic agent, paralytic, physical process), ventilation and maintenance of anaesthesia.
4. Role (or not) of atropine pre-med (see resource on the cover page, ?little, if any, advantage).
5. Anaesthetic drugs—etomidate, ketamine (or others).
6. Paralytic drugs—succinylcholine, rocuronium.
7. Maintenance infusion / push-dose—ketamine, midazolam, morphine, fentanyl.
8. Use of paediatric tools (Broselow tape) for equipment sizing, drug doses etc.
9. Use of cuffed tube is generally accepted now but avoid excessive cuff pressure.
10. Cuffed tube size = (Age/4) +3.

Outcomes

- Can be varied to suit participants.
- Uneventful intubation will usually be best—failed intubation due to airway swelling, necessitating jet insufflation via needle cricothyroidotomy as a temporary rescue pending formal surgical airway (tracheotomy).
- A successful final outcome achieves best learning.