# KidSIM Scenario

**Trauma Dog Bite – Infant (2 Week Old)**

(SD0119)

# CASE: Trauma Dog Bite – Infant (2 Week Old)

**TARGET AUDIENCE:**

ED Staff Physicians, Nurses, RRTs

**LEARNING OBJECTIVES:**

*Knowledge:*

*By the end of the session the participants will:*

- Recognize the need for a quick, good primary survey
- Recognize the need to Spinal Motion Restriction (SMR), especially cervical, in infant dog bites
- Recognize the need to explore bleeding wounds and stop the bleeding
- Recognize the indications and complications for intubation in the infant population, including pre-intubation resuscitation factors and intubation mediations
- Recognize the importance for timely disposition to CT / OR

*Skills:*

*By the end of the session the participants will demonstrate:*

- An appropriate primary and secondary survey in a trauma patient
- An appropriate cervical stabilization device (Aspen collar) or restriction with towel rolls
- Various options for vascular access and perform them with appropriate equipment for this age
- Appropriate utilization of resources when choosing and giving medications and fluids / blood
- Appropriately document on a trauma record

*Attitudes / Behaviours:*

*By the end of this session the participants will:*

- Demonstrate inclusive leadership by
  - Establishing self as a clear event manager
  - Being assertive but respectful
  - Showing support for all team members
- Identify their own role and role of others
  - Does each team member have a role?
  - Do all team members contribute?
  - Do team members help each other?
  - Do team members seek clarification?
  - Was there adaptability in roles to meet patient's changing needs?
- Demonstrate effective communication
  - Were team members communicating respectfully with each other?
  - Was there evidence of closed loop communication?
  - Did team members call attention to critical information?
  - Were team members comfortable speaking up if there was unsafe practice or actions?
- Discuss the importance of situational awareness
  - Were frequent situation summaries provided?
  - Were all team members aware of the big picture?

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  - Did team members think out loud?
  - Were there fixation errors?
  - Were team members able to effectively prioritize patient care?
- Use resources effectively and efficiently
  - Did they call for help early and utilize consultants?

**SCENARIO ENVIRONMENT**

**Location** *(Scenario scene)*:

- ACH Emergency Department

**Monitors:**

- Cardiorespiratory monitor including oxygen saturation and EtCO2 waveform

**Physical props/equipment:**

- Infant manikin
- Broselow tape
- Standard airway management supplies
  - Bagging units – BVM, Jackson Reece
  - OPA – various sizes
  - LMA – various sizes
  - Intubation roll
  - Video laryngoscope (glideslope / CMAC)
  - Bougie
- Oxygen delivery devices
  - Low flow: nasal prongs, mask
  - High flow: non-rebreather
- Standard IV Equipment
  - IV catheters/ IV tubing
  - IV fluids: NS
  - Push/Pull device or 3 way stopcock
- Medications
  - Standard trauma room medications including RSI meds and Epinephrine
  - Medication references
- Documentation records (trauma record, NVS, nursing notes)
- Trauma Checklist
- Standard Trauma Pack
  - Foley catheter equipment
  - Gastric tube
  - C-collar
- Massive Transfusion Pack

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**Make up /Moulage:**

- Scalp laceration & hematoma with blood loss – dressing supplies saturated with blood

**Multi media:**

- CXR x 2 – ETT deep / correct placement
- C-spine xray
- POCUS
- Labs – CBG

**Personnel:**

- Bedside nurses x 2
- Documenting nurse
- ED Staff physicians x 2
- RRT

**SCENARIO**

**Case Introduction:** *(Scenario given to participants)*

*Two week old male patient found in bloody crib after dog bite. Parents say left baby alone for only a few minutes when neighbor's dog went into his room. Baby has a weak cry and is quite pale and cool according to EMS. They have put dressings to the head lacerations to help control the bleeding. Estimate blood loss in crib to be 100 mLs. IO est to right tibia for 60 mL NS bolus. Est weight per broweslow 3 kg.*

**Past Medical History:** Uncomplicated maternal and pregnancy history. Born at term.

The team will have a **pre-arrival time of 5 minutes** to prepare. **Trauma Team / Code 77** should be activated. Consider use of **Trauma Checklist** pre-arrival.

**The Script:**

| Scenario Transitions / patient parameters | Effective Management | Consequences of Ineffective Management | Notes |
|---|---|---|---|
| 1. Patient arrival and primary assessment of trauma patient<br>▪ **Airway**: Patent, weak cry<br>▪ **Breathing**: **RR** 60 **SaO2** 93%<br>▪ **Circulation**: **HR** 180 **Bp** 68/50 **CRT** 4 secs, pale, cool to touch. **External** uncontrolled oozing of blood from large head/scalp lacerations. + Subgaleal hematoma. Bulky dressing saturated with blood. **Abd** softly distended | ▪ Systematic primary survey including initiation of Spinal Motion Restriction (SMR)<br>▪ Establish patency of current IO (not working any longer) and insert additional IV/IO(s)<br>▪ NS bolus<br>▪ Activation of MTP<br>▪ Cut off clothes: expose and put in infant radiant warmer | ▪ No more than one further NS bolus – has already had one from EMS<br>▪ Bleeding from the scalp lacerations are ongoing if not stapled/sutured effectively<br>▪ Temp low if not in warmer or some sort of warming technique done (ie: bair hugger on bottom) | ▪ IO from EMS not working<br>▪ Will need to use an aspen collar or just rolls<br>▪ Logrolling should be done in, or at the end of, the primary survey<br>▪ Set infant radiant warmer to 34-36 degrees<br>▪ **Access is an issue** – consider difficult IO access x 2 failed attempts. No PIV access |

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|---|---|---|---|
| **Pelvis** stable<br>▪ **Disability**: **GCS** 10 (eyes open to pain 2, inconsolable cry 3, withdraws to touch 5) **PERL** 2 mm<br>▪ **Exposure**: **T** 35.8. **Logroll** blood + to back of head. Otherwise nil | ▪ Scalp dressing should be taken down and wound exposed to close with staples/sutures<br>▪ Documentation on trauma record | | |
| 2. Secondary assessment and deterioration from blood loss<br>▪ **Airway**: weak cry<br>▪ **Breathing**: **RR** 30 - less effort **SaO2** 92% if no assist<br>▪ **Circulation**: **HR** 195 **Bp** 50/35 **CRT** 5 secs, pale, cool to touch. **External** scalp laceration still oozing. Subgaleal hematoma increasing. | ▪ Systematic secondary survey<br>▪ Intubation with cervical control<br>▪ Blood administration<br>▪ Activation of MTP if not already done<br>▪ Code 88 OR Activation<br>▪ Consider Plastics / Neurosurgery consultation<br>▪ Adjuncts: labs (gases if not done yet), xrays (chest, c-spines), OG, foley<br>▪ Administration of **Tranexamic Acid** (TXA) 15 mg/kg bolus over 10 mins | ▪ If not intubated will decrease respiratory effort<br>▪ If not recognized right mainstem intubation and pulls ETT back will become more hypoxic<br>▪ Becomes bradycardic if fluids are not given appropriately and if no atropine is given in RSI | ▪ Consider drawing up **Epinephrine** 0.01 mg/kg diluted up to 10 mLs with NS ('Spritzer')<br>▪ RSI meds: **Atropine** 0.02 mg/kg, **Fentanyl** 3 mcg/kg **OR Ketamine** 2 mg/kg, **Succinylcholine** 2 mg/kg **OR Rocuronium** 1 mg/kg<br>▪ **POCUS** results if done: No free fluid in abdomen, positive lung sliding, no pericardial effusion<br>▪ **Consider** right mainstem intubation – if so very little movement on left lung. May need to have confederate on team to tell TTL ETT too deep<br>▪ **Consider** consultation communication difficult |
| 3. Preparation for CT and OR:<br>▪ **HR** 125 **Bp** 88/50 **EtCO2** 34 **Sats** 96% | ▪ Consider further sedation prior to transfer<br>▪ Consider use of Trauma Checklist pre-departure | ▪ Should not delay for foley catheter | |

**Debriefing Points:**

- Was the primary survey quick and systematic?
- Did the wound get explored and the bleeding stopped effectively?
- Did the patient receive timely / appropriate amount of fluids / blood?
- Was there a discussion as to why this patient went bradycardic if blood volumes and/or Atropine not given?
- How long did the patient stay in the ED trauma room?
- Was there good Communication / Leadership / Role Clarification / Problem solving?
- How was the discussion with consultants?

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