

# Joint Pediatric and Trauma Surgery Conference

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# Objectives

- Identify how pediatric trauma patients are worked up differently compared to adults.
- Identify the physiologic differences between pediatric patients and adult patients and how this factors into their resuscitation.
- Learn to recognize patterns of nonaccidental trauma in the pediatric population.

# Case

- 15-month-old AA female brought in as DELTA trauma activation for large burn after falling into boiling water being used to mop the floor.
- VS: HR 196 BP 104/74 RR 20 SpO2 99%
- Weight 12 kg
- Received 125ml NS en route

# Labs and Imaging

- CBC
  - WBC 22.2, Hgb 14.8, Plt 405
- BMP
  - Na 133, K 4.2, Cl 107, Bicarb 20, BUN 14, Cr 0.31
- Lactate 2.4
- CMP, Lipase, Amylase WNL
- UA WNL
- FAST negative
- CXR WNL

# Hospital Day 4

- Started on epinephrine and norepinephrine
- ABG
  - pH 7.18, pCO<sub>2</sub> 63, pO<sub>2</sub> 305
- BMP
  - Na 152, K 3.2, Cl 125, CO<sub>2</sub> 16, BUN 13, Cr 0.45
- CBC
  - WBC 1.3, Hgb 9.5, Plt 143
- Albumin 2.1

# Hospital Day 5-OR with Burn Surgery

- CXR with concern for ARDS
- New pressor requirement
- ECHO demonstrated LV dysfunction and RV overload
- VBG 13:15
  - pH 7.05, pCO<sub>2</sub> 63, pO<sub>2</sub> 305, Lactate 6.8
- ABG 23:38
  - pH 7.02, pCO<sub>2</sub> 56, pO<sub>2</sub> 92, Lactate 9.0
- BMP
  - Na 162, K 4.4, Cl 136, CO<sub>2</sub> 13, BUN 26, Cr 0.92
- CBC
  - WBC 1.7, Hgb 10.1, Plt 101

# Hospital Day 6 AM-Pediatric Surgery Consulted

- Increasing pressor and ventilatory support
- Increased peak vent pressures and elevated bladder pressure to 30s
- Decreased UOP (NET +4.7L since admission)
- Tense and distended abdomen
  
- Underwent bedside decompressive laparotomy
  - Moderate amount of ascites released; bowel appeared healthy
  - Improved hemodynamics
  - Abdomen left open

# Hospital Day 6

- Vasopressin and milrinone added
- Blood cultures positive for MSSA
- Found to have fixed and dilated pupils
- CT of head with concern for edema, herniation, and extensive ischemic injury

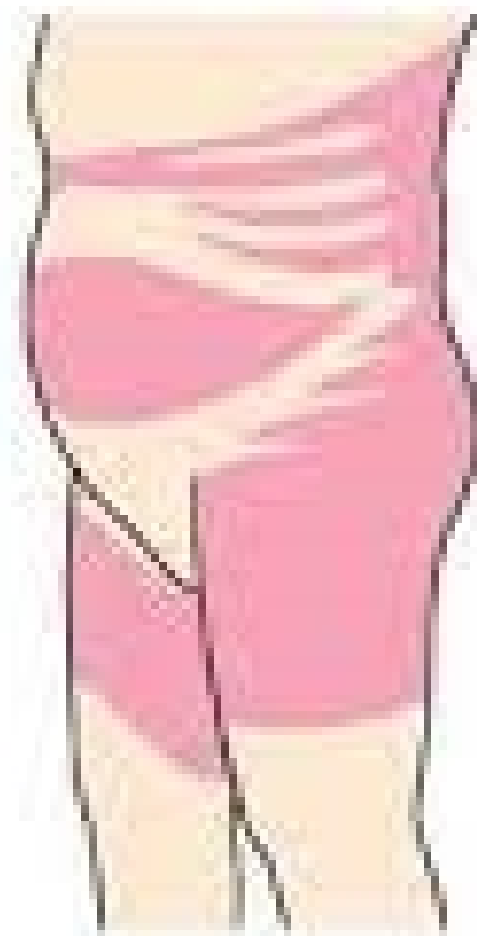


# PEDIATRIC VITAL SIGNS

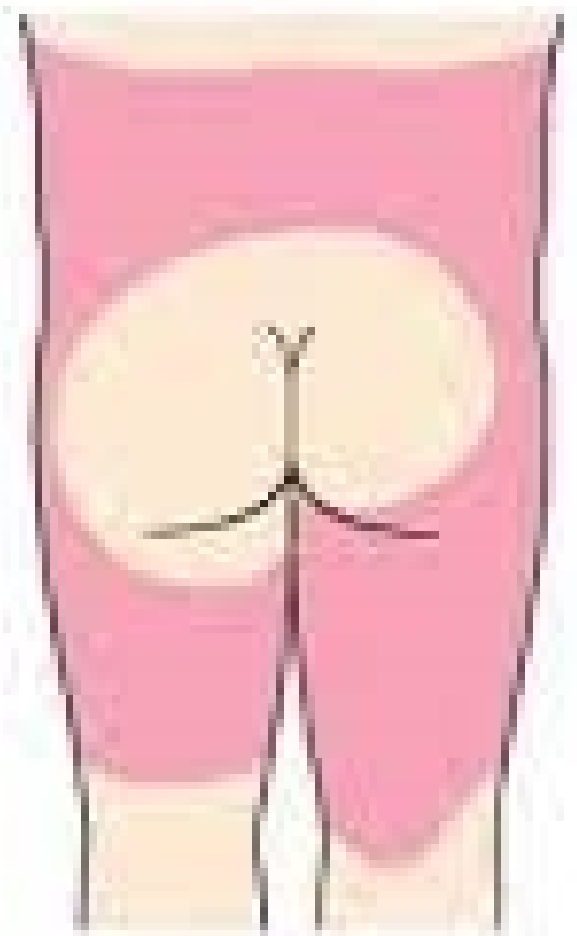
Age	HEART RATE		RESP	BLOOD PRESSURE			
	Awake HR (beats/min)	Sleeping HR (beats/min)	Resp Rate (breaths/min)	Minimal Systolic Pressure (mmHg)	Systolic Pressure (mmHg)	Diastolic Pressure (mmHg)	Mean Arterial Pressure (mmHg)
<b>Neonate (0-30 days)</b>	100-205	90-160	40-60	60	60-84	31-53	48-60
<b>Infant (1-12 months)</b>	100-180	90-160	30-53	70	72-104	37-56	50-62
<b>Toddler (1-2 years)</b>	98-140	80-120	22-37	74	86-106	42-63	49-62
<b>Preschooler (3-5 years)</b>	80-120	65-100	20-28	78	89-112	46-72	58-69
<b>School aged (6-9 years)</b>	75-118	58-90	18-25	86	97-115	57-76	66-72
<b>10+ years</b>	60-100	50-90	12- 20	90	102-131	61-83	71-79



Forced submersion in a flexed position



'Zebra' stripe



'Doughnut hole' spring

