When Humpty Dumpty Fell

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Objectives	
 Review cranial A+P Define traumatic brain injury Examine injury types Skull fractures Epidural hematoma Subdural hematoma Discuss treatment options 	
Introduction	
Case One	
18 yo male	
 Struck last night 	
Hard to wake upConfused	
 Bruising to the head 	
Drainage from earBP 116 / 74	
• Pulse 86	
• RR 14	
Scalp	
 Layers 	
 Function 	
Skull	
 Bones 	
 Function 	
 Fractures 	

Case One	
 23 yo male Struck his head Swelling and creptius over the temporal region Combative Vomiting Fluctuating LOC L sided weakness BP: 136 / 74 Pulse: 90 RR: 26 O2 Sat: 92% 	
Traumatic Brain Injury	
A nondegenerative, noncongenital insult to the brain from an external mechanical force, possibly leading to permanent or temporary impairments of cognitive, physical, and psychosocial functions with an associated diminished or altered state of consciousness.	
Brain Injuries	
PrimarySecondary	
Menningeal Layers	
 Dura Mater Arachnoid Membrane Pia Mater Functions Potential Spaces Vessels 	

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Monroe Kellie Principle	
E e	
• Function	
Stages	
Results	
 Limits 	
Ornah val Daufraiau	
Cerebral Perfusion	
Lance days a	
Importance	
Measurement	
• Failure	
• CPP = MAP – ICP	
 MAP = DBP + 1/3 PP 	
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Herniation	
0 T	
Case Two	
40	
48 yo male	
• Unhelmeted	
Head first into a guardrail at 75	
mph	
Unresponsive	
Massive facial trauma	
Moves extremities x4	
Pupils 3mm and sluggish	
Mandible is unstable	
Snoring respirations	
• BP: 107 / 74	
• Pulse: 90	
 RR: 24 and irregular 	
 O2 Sat: 88% 	

Case Three 58 yo male Seizure Post ictal Left pupil dilated • CBG = 88 Recent headaches Visual disturbances Personality changes • BP: 172 / 112 Pulse: 46 • RR: 34 • O2 Sat: 96% Physical Exam Scene Size-up General Impression Airway / C-Spine Breathing Circulation **Respiratory Patterns** Cheyne-Stokes Central Neurogenic Hyperventilation Apneustic Breathing Gasping Respirations • Biot's / Ataxic Respirations Disability LOC Motor function • GCS · Pupil response

Glasgow Coma Score	
 After initial assessment After initial treatment Prior to medications Improvement (>2 points) No change Deterioration 	
Pupil Exam	
 Essential Time Findings Normal Abnormal 	
Mental Status	
 Personality Amnesia Disorientation Confusion Combative Coma 	
Neurologic Findings	
HemiparasisHemiparalysisParesthesiaSeizurePosturing	
Treatment	
 Airway Breathing Ventilation Hyperventilation Tools Circulation Hemorrhage control Hypotension Fluids 	
 Targeted Treatment 	

	Summary Traumatic brain injuries can cause significant neurological outcome Treatment is targeted toward preventing secondary brain injury EMS providers play a great role Hypoxia and hypovolemia kill patients	
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