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| **Case Title**  | Blunt Cerebrovascular Injury (BCVI) - PAR |
| **Scenario Name** |  |

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| **Learning Objectives -** [**Use action words**](http://ubccpd.ca/sites/ubccpd.ca/files/Accreditation_Learning%20Objectives_%20Verbs.pdf) |
| **Knowledge:**1. Describe risks for BCVI
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| **Skills:**1. Demonstrate assessment when considering BCVI
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| **Attitude/Behaviours:**1. Demonstrate team skills
2. Demonstrate situational awareness
3. Demonstrate graded assertiveness
 |
| **Scenario Environment** |
| **Location** | PAR |
| **Monitors** | Stand PAR Monitor |
| **Props/Equipment** |

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| Penlight |  |  |
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| **Make-up/Moulage** | Nil |
| **Potential Distractors** | Nil |

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| **Case Introduction:** |
| 45 year old to PAR after surgurey to extensive facial lacerations – no other significant injuries. Involved in speed single vehicle accident.  |

| **Patient Parameters** | **Effective Management** | **Notes** |
| --- | --- | --- |
| **Phase 1: Arrival to PAR****Condition:** Stable **Initial Assessment*** **Heart Rhythm:** Sinus
* **HR:** 74
* **BP:** 120-45
* **RR:** Intubated. Spont RR of 20
* **SP02:** 98
* **T:** 36.5
* **Glucose:** 7
* **CNS:** Still drowsy. GCS 10(E:3, V:1, M:6) PERL @ 4mm. Proceeds to GCS 14 (E:3, V:5, M:6)
* **Chest:** Clear. Seatbelt bruising present neck/chest/abd
* **CVS:** Normal
* **GI:** Normal
* **Integ:** Mutliple bruising/lacerations
* **Weight:** 100 kg
 | 1. **Take a focused history** (see Notes column)
2. **Management**
* Attach to monitors
* Neuro check - *\*\*critical action*
* Extubate

*Proceed to* ***Phase 2:Neuro decline*** *after extubation and Normal assessment* | 1. **Focused history**

**PMHx*** Healthy

**Meds*** Nil

**Allergies*** Nil
 |
| **Phase 2: Neuro decline****Condition:** Appears to be more drowsy**Physical Examination*** **Heart Rhythm:** Sinus
* **HR:** 100
* **BP:** 100/40
* **RR:** 16
* **SP02:** 98%
* **T:** 36.7
* **Glucose:** 7
* **CNS:** GCS (E:2, V:3, M:6). Neglecting rt side. Lt pupil sluggish to react to light
* **CVS:** Increasing edema to lt side of neck
 | 1. **Patient Reassessment** (see Notes column)
2. **Management**
* Recognize neuro decline
* Complete full neuro assessment
* Notify physician of change in neuro status

*\*\*Proceed to* ***Phase3:*** *Neuro crisis* | 1. **Patient Reassessment**

**Airway*** Patent

**Breathing** * Normal

**Circulation*** Mildly hypotensive
 |
| **Phase 3: Neuro crisis****Condition:** Unresponsive**Physical Examination*** **Heart Rhythm:** Sinus
* **HR:** 125
* **BP:** 76/30
* **RR:** 20, shallow
* **SP02:** 89%
* **T:** 37
* **Glucose:**  7
* **CNS:** GCS 6(E:1, V:1, M:4). Only withdraws Lt side, rt side flaccid. Lt puil dilated
* **CVS:** Gross neck edema
 | 1. **Patient Reassessment** (see Notes column)
2. **Medical Management**
* Call for additional support/help – consider calling a Code Blue
* Consider fluid resucusitation/blood products
* Consider airway management
* Return to OR
 | 1. **Patient Reassessment**

**Airway*** Compromised due to increasing neck edema

**Breathing** * Compromised

**Circulation*** BP declining, HR increasing
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| **Debriefing Points** |
| * Although BCVI represents a rare injury, the long-term complications can be fatal but mostly prevented by adequate treatment.

Cerebral artery dissection* The vast majority of dissections present with cerebral infarct; those few that present with local mass effect and respiratory compromise may deteriorate rapidly, requiring urgent resuscitation and consideration of endotracheal intubation, which is often dangerous and/or impossible.
* Rarely, dissection can cause severe dysphagia, neck swelling, dysphonia, and extremely rarely, rapidly life‐threatening airway obstruction
* When to watch for BCVI
* Signs and symptoms of BCVI
* Components of complete neuro assessment. Early signs of neuro deterioration vs. late signs
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