Case conference

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The patient

- 57-year-old man
- DAY1 15:39
- T/P/R:38.0°C/63/16
  BP 146/90 SpO2 95%
  E4V5M6
- Chief complaint: 頭部、頸部、左肩鈍傷/左手麻
- Triage: 3

Present illness

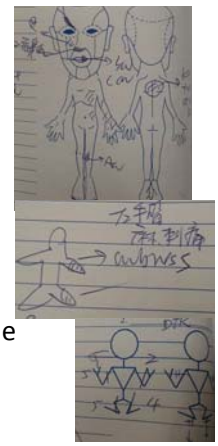
- 機車與機車相撞
- 撞到頭 有安全帽沒有掉 No ILOC
- Neck pain, back pain
- 無力

Past history

- NKDA

Physical examination

- Clear consciousness
- On neck collar,
  no C-spine tenderness,
  自覺左頸會痛
- Pupil: 2+/2+, EOM: full
- Chest: tenderness of left side
- Abdomen: tenderness of left side
- Extremities: 左手臂舉不起來



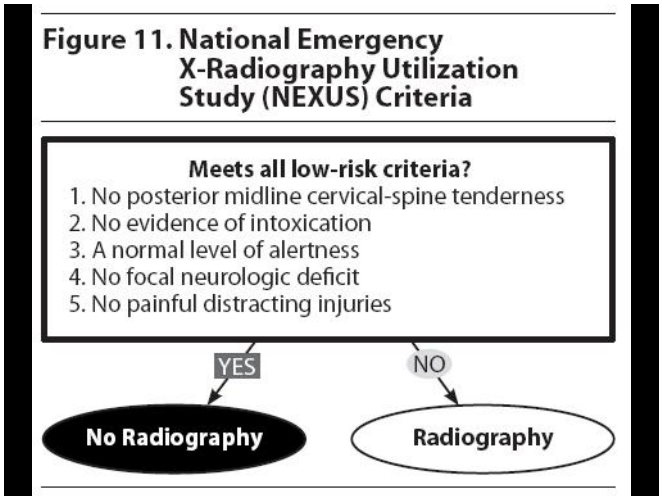
- What is your impression?
- Is C spine clear?
  - 請問你要不要protect C spine?
  - 需不需要 C spine imaging? 什麼image study?

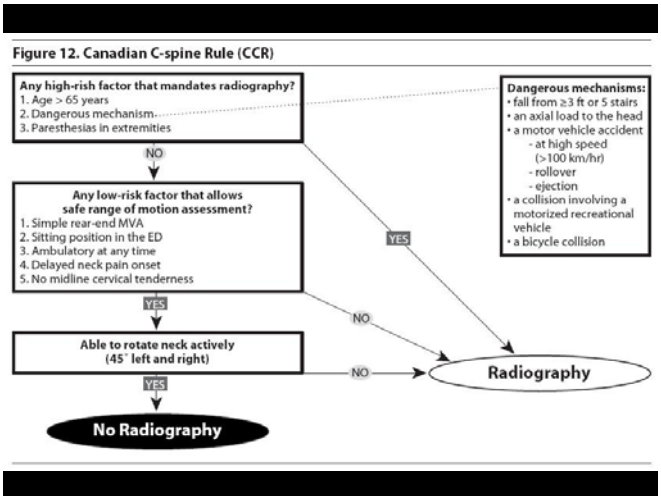
Impression

- Major trauma r/o C-spine injury r/o ICH
- Laceration of forehead

When to Suspect C-spine injury

- Obtunded patients with
  - suspect head injury
  - injury above clavicle
- Neck pain & focal signs





Imaging study of C-spine

- C-spine CT
- Plain films: AP, lateral, open-mouth view
- MRI

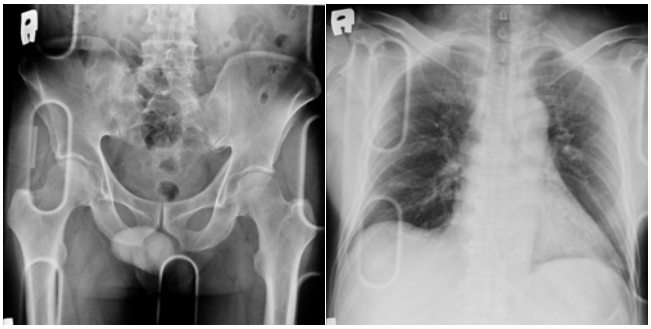
C-spine Protection & In-line Immobilization

Logrolling

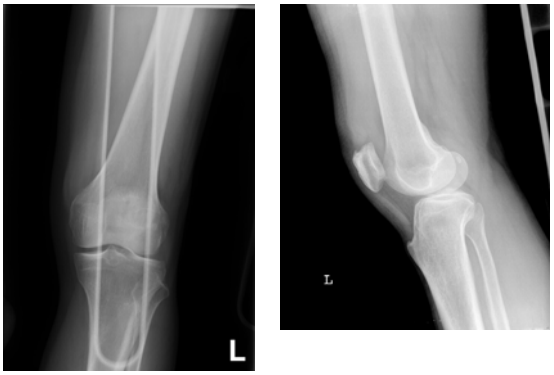
16:15

- 外on neck collar、長背板
- Take picture
- T. T. 0.5mL IM st
- Bacitracin 1 tube EXT
- Erythromycin 1 tube EXT
- Log roll檢查背部
- Whole body CT without contrast with C-spine
- CXR, pelvis, left knee

CXR & Pelvis



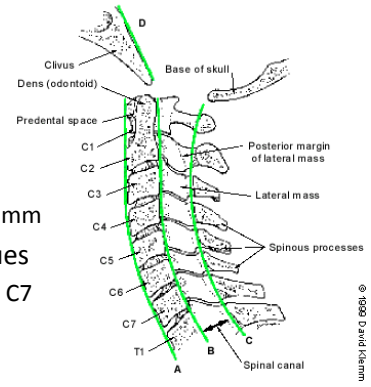
Left knee



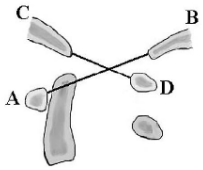
Whole body CT

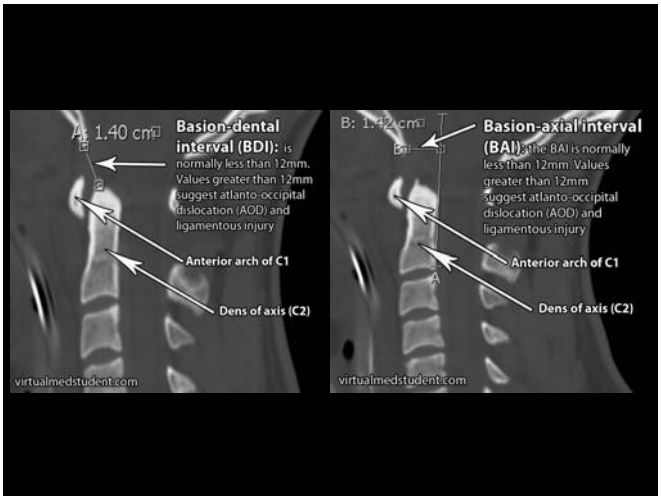
Assessment of C-spine

- Alignment
- Bone
- Cartilage
- Dens
  - Predental space <3mm
- Extraaxial soft tissues
  - 7mm at C3, 3cm at C7



- Radiographs
  - low sensitivity in detecting injury (57%)
  - Powers ratio
    - used to diagnosis occipitocervical dislocation
    - technique
      - Powers ratio = C-D/A-B
        - C-D: distance from basion to posterior arch
        - A-B: distance from anterior arch to opisthion
      - significance
        - ratio ~ 1 is normal
        - if > 1.0 concern for anterior dislocation
        - ratio < 1.0 raises concern for
          - posterior atlanto-occipital dislocation
          - odontoid fractures
          - ring of atlas fractures





Whole body CT

- Brain: no ICH, open fracture of frontal sinus
- C-spine: No burst fracture. C3-4 prevertebral soft tissue swelling, hematoma?
  →Consult NS Dr.林志達:
  Dexamethasone 1amp IV q6h
  Do C-spine MRI
- Chest and abdomen: no internal bleeding
- Remove 長背板

17:18

- Consult NS
- Dexamethasone 1amp IV q6h+st
- CBC/DC/Plt
- Glucose, Crea, AST, Na, K
- PT, aPTT
- N/S run 60 ml/hr
- Arrange C-spine MRI

Lab data

Hb	WBC	Plt	PT (INR)	aPTT
14.0	12.3	159k	10.8 (1.04)	28.1
glucose	Crea	AST	Na	K
127	0.86	35	139	3.4

C-spine MRI

- 放射科說要明天早上

C-spine MRI

C-spine MRI

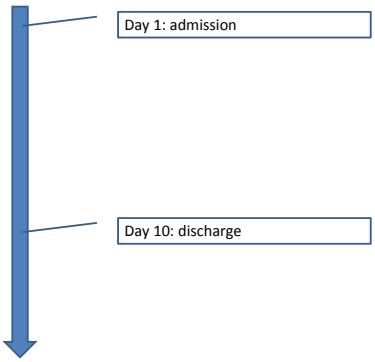
- Posterior disc proplase with cord compression and edema.
- Bilateral C6 and C7 root outlet narrowing.
- Blood or fluid collection at C1-C4 prevertebral space.

NS consultation

- Suture the laceration of forehead, antibiotic use with Augmentin, inform the possibility of sinus infection
- Dexamethasone 5mg IV q6h for radiculopathy, suggest operation for C4-5 HIVD
- Admission

- Wound suture
- Remove neck collar
- Winzolin 1g IV st
- Pantoloc 1vial IV st
- Admission

Hospital course



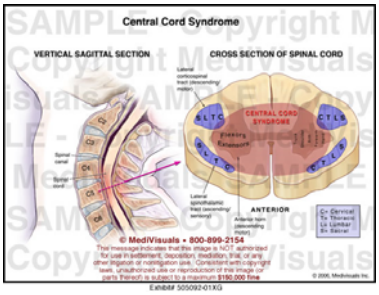
SPINAL CORD INJURY

Spinal cord injury

- Level
- Complete/incomplete
- Spinal cord syndromes

Central cord syndrome

- Hyperextension
- 上肢比下肢無力
- 預後佳



Anterior cord syndrome

- Infarction of anterior spinal artery
- 痛覺及運動功能損傷
  保留振動及本體感覺
- 預後最差

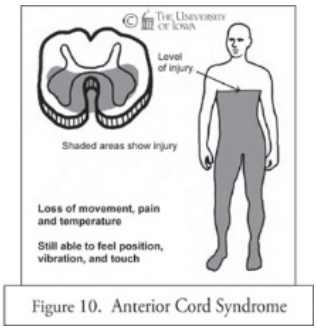
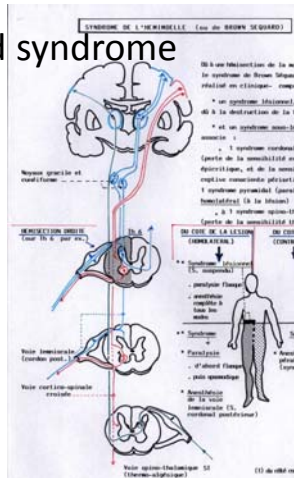


Figure 10. Anterior Cord Syndrome

Brown-Sequard syndrome

- Penetrating trauma
- 同側運動及本體覺損傷
  對側痛覺溫度覺損傷



THANKS FOR YOUR ATTENTION