Simulation - Pelvic Fracture

Patient ID: 56 yr old male

PMHx: HTN, hyperlipidemia, T2DM

Meds: Metformin, Crestor, Diltiazem Allergies: NKDA

Hx: Motorcycle crash on busy street. Car forced off road, crashed into ditch. Helmet worn, EMS (BLS crew) scooped and ran

Initial EMS Vitals: P100, BP 90/50, Sat 97% RA

Patient Presentation: nurse provides history of event

Exam:

* C-spine collar and back board
* Normal head, neck, chest, upper extremities
* Abdomen soft, suprapubic and severe pelvic tenderness
* Large anterior pelvic bruising, blood from urethral meatus, perineal bruising

Monitor Vitals: P 100, BP 75/55, RR 20, Sat 100% on NRB

When requested:

Glucose = 12 mmol/L

Temp axilla = 35.8oC

**Expected Management:**

IV established by EMS

RT has applied NRB

RN attaching monitor

AIRWAY – nil, talking

BREATHING – O2 by NRB, titrate off

CIRCULATION

EDUS – No effusion, Small FF abdomen, No PTX

Level 1 infuser – uncrossed blood, massive transfusion activation

* ~ 1:1:1 platelets and FFP

Pelvic binding, unstable on exam

DISABILITY

GCS 14, slightly confused

OTHER

Analgesia

CXR, Pelvic Xray,

Bloodwork: VBG, Type and Cross, CBC, lytes, BUN/CR, lactate, Ethanol

Gen Sx, Ortho, and/or TRAUMA TEAM and/or IVR consults

No Foley; Retrograde urethrogram eventually

**ACTORS**

1. **Nurse**
2. **RT**

**RN Instructions**: (10 min)

Provide history to resident on arrival:

*56 yr old male, motorcycle crash on street. Car forced off road, crashed into ditch.*

*PMHx: HTN, hyperlipidemia, T2DM*

*Meds: Metformin, Crestor, Diltiazem Allergies: NKDA*

More history if asked:

*PHx: HTN, hyperlipidemia, T2DM*

*Meds: Metformin, Crestor, Diltiazem*

*NKDA*

*Scene history: no apparent LOC, looked like bike was stopped immediately and patients lower*

*torso caught in front apparatus and handle bars, helmet was on*

Single antecubital IV access by EMS

* Able to rapidly get a second large-bore IV as requested

Monitors to be placed while resident assessing

Temperature provided only if requested: oral = **35.8oC**

Glucometer check if directed: **12 mmol/L**

If directly asked about specific exam or physical findings, may comment on the following:

Abdomen: *Abdomen soft, suprapubic and severe pelvic tenderness*

Pelvis: *Large anterior pelvic bruising, blood from urethral meatus, large perineal bruising*

For Central Line Placement: give resident requested line-kit, and advise:

*Go through the steps, but do not puncture the skin. I will dress the line when you are done.*

If Xrays requested: perform appropriate log-roll procedure and slide xray plate under patient, then ask resident to leave room for 15 seconds while xray completed

**RT Instructions**: -

RT already in room with patient,

Place patient on 100% by NRB

If asked about pupils: *equal bilaterally*

If asked about airway: *patent*

If asked about chest: *no evidence of trauma, good AE bilat*

If requested, may set-up for intubation: but advise the physician that he is breathing well and his airway seems fine – delay if possible …trainee to be penalized if pursues intubation as immediate priority

Tech Instructions:

**Set-up:**

Adult male mannequin

* + C-spine collar and back board
  + Large anterior pelvic bruising
  + small blood from urethral meatus
  + perineal bruising

XRays:

* + N CXR
  + Open-book pelvic #

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **P** | **BP** | **RR** | **Sats** | **Eyes** | **pupil** | **Other** |
| **Start** | 1A | 100 | 75/55 | 20 | 100 | Open | 4+ | Patient c/o severe pelvic pain |
| 2U PRBC | 1B | 90 | 90/50 | 20 | 100 | Closed | 4+ | Patient c/o severe pelvic pain |
|  |  |  |  |  |  |  |  |  |

**Additional Comments:**

**References:**

Tranexamic Acid:

1 g over 10 min followed by infusion of 1 g over 8 h

Pelvic Binding:

sheet should center on the greater trochanters and extend to the iliac crests

Massive Transfusion Protocol (Kingston General Hospital, 2010)

Indication: “anticipated need for urgent administration of multiple units of blood products”

* + - Shock + trauma
    - Ongoing bleeding

Protocol: repeated delivery of “transfusion packs” that contain

* + - 5 units pRBCs
    - 5 units FFP
    - 1 unit buffy coat platelets