(255)

Royal Brisbane and Women's Hospital
Health Service District
Department of Emergency Medicine

EXECUTIVE DIRECTOR - MEDICAL SERVICES
2/481
18 MAY 2005
R.B.H.

Queensland Government

Queensland Health
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10 May 2005

Mr Peter Leck
District Manager
Bundaberg Health Service District
Bundaberg Hospital
PO Box 34
Bundaberg QLD 4670

Dear Mr Leck,

The Queensland Trauma Registry has been funded by Government to investigate and improve trauma outcomes through all facets of acute care. As part of the collaborative process, the Royal Brisbane Hospital Trauma Review Committee is providing the attached case report to you for discussion and teaching.

RE: P26
Date of Birth:
Date of Presentation: 23.12.2004

This case was discussed at the Trauma Review Committee on 3rd May 2005 for the following reason:

- **Referring hospital transfer time > 6 hours**
- **Return to OR within 48 hours of initial procedure**
- **Unplanned admission to ICU**

This patient was injured when he hit a stump while riding a motorbike in a National Park. He sustained a large laceration to his R) groin. He was managed at Bundaberg Hospital until his transfer here on the 1st January 2005. See attached case report.

We would value your comments on this case and ask you to discuss it within your case audit process. Please comment with particular reference to the comments above. We welcome your feedback.

Please be aware that the tripping of a performance indicator does not necessarily imply any failure in patient care but simply acts as a flag to identify any event that for some reason has fallen outside accepted norms. The Queensland Trauma Registry has been established to examine systems of care and to elucidate flaws with the Queensland Trauma system.

Thank you for your help.

Yours sincerely

Dr Bill Lukin
Co Chair – Trauma Review Committee
Staff Specialist – Department of Emergency Medicine
Royal Brisbane Hospital

Cc Dr Richard Ashby, Executive Director Medical Services, Royal Brisbane and Women's Hospital.

QTR

Trauma Review Committee

Royal Brisbane Hospital

Case No: 1 **Trauma ID: 2005.229-15/M**

Injury Cause:

Injury date/time: 23/12/2004 10:28
External Cause: Motorcycle rider injured in collision with fixed or stationary object, driver, nontraffic accident, unspecified motorcycle
Place: Other specified place of occurrence, forest
Activity: While engaged in sports or leisure, Wheeled motor sports, Motorcycling
Event Description: Woodgate. Hit stump while riding motorbike in National Park. Laceration R) groin.

Prehospital:

Time

Request: 10:28 **Scene arrival:** 11:09 **Scene departure:** Unknown **Hospital arrival:** 11:50
Scene int (min): n/a **Total int (min):** 82 **Vehicle type:** Helicopter **Highest skill level:** IC Paramedic

Observations

Pulse rate: 150 **Resp rate:** 35 **BP:** 80 / **GCS:** 11

Interventions

Airway: Face Mask **Fluid vol (mls):** 1500 **Fluid type:** Crystalloid

Comments: ARF from flight IC paramedic - ie second unit on scene.
Large laceration L) groin.
1st officer on scene stated blood 'flowing freely' prior to pad & bandage.
L) leg slightly mottled with decreased movement & sensation.

Referring Hospitals:

Hospital: BUNDABERG BASE HOSPITAL
Arr date/time: 23/12/2004 11:50 **Ref hosp transfer time:** 219 hrs 20 min **Triage:** Unknown

Observations

Pulse rate: 150 **Resp rate:** 30 **BP:** 80 / **Temp:** Unknown **GCS:** 14

Interventions

Airway: ETT **Air time:** Unknown **Fluid vol (mls):** Unknown **Fluid type:** Crystalloid & blood

Comments: Pale & peripherally shut down.
Bleeding from L) groin - oozing thru packs.
To OR - Findings: 1cm lac L) femoral vein at saphenofemoral junction, completely transected rectus femoris, lacerated fascia & abductors with muscle ..... Femoral artery & nerve intact.
For x-rays & CT's post-op.
CT abdo report (dated 24/05) - free peritoneal fluid, pneumoperitoneum & surgical emphysema in lower abdo & pelvis, multiple pelvic #'s & L) acetabulum.
1500hrs - Admitted to ICU.
1545hrs - Developed acute L) leg ischaemia, duplex USS - no flow distal to CFA.
1600hrs - Returned to OR due to L) leg compartment syndrome.
Upper & lower leg fasciotomies performed. Knee & ankle noted to be very stiff on passive movement - cause unknown.
1930hrs - Surg r/v - cont. to have pulseless L) leg. For urgent USS leg, if no improvement may need t'fer to RBH.
2030hrs - R/v Surgeon. USS shows no distal blood flow from groin wound. Coagulopathic, hypotensive, tachycardic. L) foot, cold & pulseless. Needs urgent exploration & evacuation of clot. Option of t'fer following OR or tomorrow.
Return to OR: Femoral artery thrombosed, intimal injury. Artery ligated & short segment bypass (gortex) graft sutured end to side. Good PT pulse.
25/12/2004 - Low grade fevers. Foot - remains ecchymotic distally, warm with capillary refill.
26/12/2004 - Fevers. Foot cold with diffuse mottling. Foot drop. X-rays reviewed - probable # acetabulum - no change in Mx.
27/12/2004 - Foot - a/a. Hb 83. T'fer to ward.
30/12/2004 - Febrile. Wounds - some superficial muscle necrosis, no obvious infection. Foot - Improving. Blood cultures negative so f repeated + wound swab. WCC was 10.5 now 17.8.
31/12/2004 - Wound swab - GPB & GPC. A/B's cont. Timentin added.
01/01/2005 - Tachycardic. No DP pulse, PT palpable, cool toes, foot mottled & blistering on dorsum. For d/w RBH re t'fer. Packed cells commenced.

Case No: 1 Trauma ID: 2005.229-15/M

Interfacility:

Provider: QAS - Queensland Vehicle type: Helicopter Highest skill level: IC Paramedic

Activation time: 10:28 Arr–dep date/time: 01/01/2005 11:50-12:49 Turnaround int (min): 59

Interventions

Airway: Face Mask Fluid vol (mls): 2000 Fluid type: Crystalloid & blood

ED Admission:

Pres date/time: 01/01/2005 15:10 Bypass ED: No Adm date/time: 01/01/2005 16:37

Disposition: OR/ICU Triage: Resuscitation TT Activation: Yes

Observations

Pulse Rate: 134 Resp Rate: 25 BP 137/50 Temp: 39.5 GCS: 15

Interventions

Airway: Face Mask Fluid Vol (mls): 5500 Fluid Type: Crystalloid & colloid

Comments: S/b Vasc Reg – CTA urgently & review.
CTA - graft intact. ? gas gangrene.
S/b Vascular Surgeon. Problems:
Septic, WCC 23.7, tachycardic. Muscle Necrosis - CK 4240. Ischaemic foot with fixed changes which have been present for some days. Inadequate fasciotomies, gas on CT in muscles of lower leg.
Anaemia, Hb 76. Hyponatraemia Na 120. Liver enzymosis, ? cause, ? due to sepsis. Hypoproteinaemia
Skin necrosis in thigh. Infected graft.
In summary a life threatening condition.

Definitive Care:

01/01/2005 - 1720hrs - OR - Exploration L) Groin, CFA interposition, debridement & washout, extension of fasciotomies.
Findings - advanced sepsis, purulent & necrotic groin wound, necrotic forefoot & patchy necrosis ant & post compartments -> compartment syndrome, likely venous gangrene.
2010hrs - To ICU post-op. Given ADT as no evidence of its administration at B'berg.
2324hrs - Ortho r/v - no intervention at this stage.
02/01/2005 - OR - Through knee amputation.
04/01/2005 - OR - Debridement & change of dressings(COD). Extubated post-op.
06/01/2005 - OR - Formalization through knee. To ward post-op.
08/01/2005 - OR - Washout & COD L) groin & thigh wound.
10/01/2005 - OR - Washout & COD L) groin & thigh wound.
12/01/2005 -OR - Washout & COD L) groin & thigh wound.
13/01/2005 - Febrile, Gram + cocci in blood culture - A/B's commenced.
16/01/2005 - OR - Washout & COD L) groin & thigh wound.
19/01/2005 - OR - SSG to L) thigh & groin wound.
25/01/2005 -OR - COD all wound.
03/02/2005 - GARU consult - placed on waiting list.

Outcome:

Days in ICU: 5 days LOS: 39 days Outcome: Survived Disch/Death date: 09/02/2005

Scores ISS: 9 RTS: 6.8174 TRISS 0.9868

Comments: T'fer to GARU
15/03/2005 - Discharged home with mother on crutches plus wheelchair.
OPD follow-up.

Injuries:

Extremities:

(severity - 3) Femoral artery intimal tear, no disruption

(severity - 3) Femoral vein laceration

(severity - 3) Pelvis fracture, with or without dislocation open/displaced/comminuted

(severity - 2) Muscle laceration

Case No: 1 Trauma ID: 2005.229-15/M

Performance Indicators (tripped):

Total prehospital time > 1 hr

Referring hospital transfer time > 6 hrs

Return to theatre within 48 hours of initial procedure

Unplanned admission to ICU

Complications:

Septicaemia

Wound infection

Gangrene

Graft infection