Post-Partum Haemorrhage
“Another Option”
Post-Partum Haemorrhage

- Remains a leading cause of maternal death both globally and in Australia and New Zealand.
- Incidence is 5-15% but it is increasing = 2% all deliveries.
- Majority cases are minor and respond to active management. (Oxytocics reduce risk by at least 50%) (RANZCOG (2011))
- Traditionally defined as blood loss of > 500mls & severe PPH as > 1000mls.
- Blood loss is quick uterine blood flow ~ 500 - 800mls/ min.
- Women with 5 litres blood can exsanguinate within 10 mins.
Figure 3.3: Causes of maternal deaths, per cent, Australia, 2008–2012
Case Presentation

40 year old indigenous female: 14 weeks gestation, G4P3.

- **14/40:** IOL for fetal death in utero, then sent back to her country home? Passed products?

- **4/7 POST IOL (in country town):** large PV bleed.

- **SAME DAY 1325 hrs:** Presented to small rural hospital via ambulance
  - 10/10 pain, BP 80/, HR 130, diaphoretic and pale, lost ~ 2 Lt blood loss.
  - Initial treatment IV Syntocin (40us/1Lt Saline @ 250ml/hr).
  - VE - multiple large clots in vagina, Dr not willing to remove as thought to increase bleeding.

- **1507 hrs:** Flight Nurse diverts to patient from another job. Arrives at patient 1630hrs

- **On arrival at hospital:**
  - Pt in extreme pain
  - pale (white), vomiting, HR 120, BP 80/40, GCS 13.
  - Bed linen entirely soaked with blood constantly “pouring out.”
What happened then?

Immediate Rx

- 2nd IV Line and second bag syntocin & IDC inserted.
- Clots removed with immediate relief of pain but SBP 70-80, pale ++ and still bleeding (estimating blood loss total ~3-4 Lt). *No blood available on location.*

Call for blood & retrieval

- Nil teams available however, ambulance helicopter with a trauma patient on board was diverted to drop their 6 units blood off but unable to assist in any other way.
- Further treatment – 3 units blood transfused SBP 80/, HR130, increasing pain and further loss of ~ 500mls with clots, fundus still boggy despite fundal massage.

Further deterioration – “Get this patient to Orange hospital”
- *How... ?*

1915 Depart for Orange hospital in bad weather (Multiple storm cells).

Arrive Hospital 2015hrs ... pt. went to OT.
Retrieval has 5 T’s Not 4 T’s

1) Tone (uterine atony) ~ 70%
2) Tissue (retained tissue, clots) ~ 10%
3) Trauma (laceration, rupture,) ~ 20%
4) Thrombin (coagulopathy) ~ <1%
5) Transfer to Theatre
WHO recommendations for the prevention and treatment of postpartum haemorrhage

- The use of uterotonics (oxytocin alone as the first choice) plays a central role in the treatment of PPH.

- Uterine massage is recommended for the treatment of PPH as soon as it is diagnosed, and initial fluid resuscitation with isotonic crystalloids is recommended.

- The use of tranexamic acid is advised in cases of refractory atonic bleeding or persistent trauma-related bleeding.

- The use of intrauterine balloon tamponade is recommended for refractory bleeding or if uterotonics are unavailable.
Balloon Tamponade

- Costly but effective in stopping bleeding in 5 - 15 mins.
- Not widely available.
- Other option is “Glove Tamponade” ~ 70-80 % effective.
- Ineffective with excessive blood / retained products
• Skills required and time it takes for insertion?
• Ultrasound guidance?
• Flight Nurses scope practice?
The Facts

- Majority of obstetric transfers in Australian retrieval services are done by single flight nurses / midwives.
  - NSWAA ~90%,
  - Care Flight Darwin ~80% FN only transfers.
- Thankfully most cases PPH are controlled with standard measures.

But what if these measures don’t hold or stop bleeding?
How do we best transfer as a single clinician – What are our options?

Atonic uterus – bleeding continues

- Bimanual compression of uterus
- Aortic compression
External Aortic Compression (EAC)

- Compressing the aorta through the abdominal tissues
- Noninvasive aortic cross-clamp

- Consider at any point of PPH management.
- Stop blood loss whilst other measures are instigated.
- Queensland Ambulance 2015 clinical practice procedures advocate both,
  1) EAC
  2) Bimanual Uterine Compression.
- Drawback is amount of pressure to be effective ~ 40-60kg.
External abdominal aortic compression: a study of a resuscitation manoeuvre for postpartum haemorrhage.

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Author information

Abstract

External aortic compression is an emergency manoeuvre proposed to reduce postpartum haemorrhage and permit time for resuscitation and control of bleeding.

It is recommended that external aortic compression be considered in severe postpartum haemorrhage, particularly during stabilisation or life-threatening transport of the patient. This simple manoeuvre may be used as an adjunct to other measures and could prove of benefit, especially in locations or situations where advanced medical assistance is geographically or temporally removed.
Questions

1) Can clinicians (single responding Flight Nurses) perform bi-manual compression either in aircraft or whilst loading into the aircraft? (recommended for at least 30 minutes)

2) Can clinicians compress the required weight in order to stop blood flow?

3) Are these measures even suited to transport situations?
• AAJT is a circumferential device that utilizes a belt, windlass and pneumatic pressure to compress the aorta.

• Figuratively “Turns off the faucet”

• FDA approved

• Applied by single operator 30-45 seconds.

• Non surgical or invasive.

• Positioned at the umbilicus to allow compression of the aorta at the bifurcation.

• Left on safely for 1 hour and 7 up to 4 hours (jury still out)
Indications

Haemorrhage below the site of application that cannot be controlled with other techniques.

- Pelvic fractures
- Penetrating trauma lower abdomen, pelvis, buttocks.
- Ruptured exsanguinating ectopic pregnancy
- Post partum haemorrhage

Don't allow critical red blood cells to be lost. Turn the faucet off by utilizing the AAJT as quickly as possible. Time Bleeding is Time Dying.
Contraindications

- Device too large for the patient / patient too large for the device.
- AAA.
- 2\textsuperscript{nd} and 3\textsuperscript{rd} trimester.
- The device is contraindicated until the uterus is empty.
Analgesia

EAC will raise the SVR enough in a critically hypovolemic patient to restore sufficient flow to brain and heart that they will wake up.

J Trauma 1994;36(1);131-134.

Flight Nurse / Single Clinician 7 options

• Fentanyl 50mcg every 5 mins
• Ketamine 10mg every 5 mins (+/- Midazolam)
• Morphine 5mg every 2-5 mins

“Remember tourniquets are uncomfortable but it’s a lifesaving option when all else fails”
In 1834, when referring to massive obstetric haemorrhage, James Bun dell wrote:

‘It is clear that when patients are in this condition, trembling upon the very brink of destruction, there is but little time for you to think what ought to be done; these are the moments in which it becomes your duty not to reflect, but to act.

Think now therefore, before the moment of difficulty arrives. Be ready with all the rules of practice, which those very dangerous cases require’

“Aiming higher & reaching further”
Thank-you

Whatever you do always give 100%.

(Unless You’re donating blood).

www.QuotesOfTheDay.org