PPH at Cesarean Section "Deeper Dive"

Q&A from Group Chat

Can you place uterine balloon tamponade (UBT) in the treatment of postpartum hemorrhage (PPH) at time of cesarean delivery?

If uterine atony (or placental site bleeding) is the cause, UBT can be used, but there is limited evidence. The recommendation is to perform compression sutures first, to avoid the risk of puncturing the balloon/condom with a needle. UBT can also be placed postnatally, after cesarean section (CS), if PPH occurs due to uterine atony and is not responsive to uterotonics.

Do you have any issues with blood? If so, how are you handling them?

This important issue was not raised or addressed much during this session. We are planning this as one of the upcoming Special Topic Deeper Dive Series.

Is there a good model for repair of cervical lacerations at time of CS? It is a common problem with impacted head and uterine atony.

We will open this up to the group for suggestions, but there are quite a few lower-fidelity models (though not mass produced) that can provide fairly good simulation, or can be modified to do so. Note that repair of cervical lacerations/extensions at CS differs from repair of cervical lacerations following vaginal birth (where on the cervix, angles, exposure, risk of ureteral ligation, etc.), so models for repair of cervical laceration after vaginal birth serve a different purpose. Could they be modified, positioned, and attached to a CS simulator for realistic practice?

An important element for this is prevention. Reverse breech delivery results in less trauma/lacerations/extensions than trying to manually elevate the fetal head (see presentation pdf). This relatively easy technique should be taught.

Training videos: Professor Sue Fawcus, South Africa training program **Essential Steps in Managing Obstetric Emergencies (ESMOE)** has teaching videos showing how excess bleeding at CS can be managed.

- Please share with the CoP, professor.

The PROMPT Maternity Foundation approach to quality assurance was suggested as resource for comprehensive materials for CS: https://www.promptmaternity.org/

Have there been any efforts to standardize how blood loss is measured in your hospitals or in the primary health centers in your countries? Is PPH measured predominantly by visual estimation or by objective measurement, such as using drapes or gauze swabs?

Most facilities continue with visual estimation, which we know is imprecise. It is hindered by subjectivity and does not always match the clinical status of patients.

Objective methods of estimating blood loss, such as the use of graduated collecting drapes and weighing of swabs are increasingly being used, but are still relatively uncommon in most facilities in most countries.

In response to a prior question: the **largest published TXA prophylaxis trial** at delivery is the **TRAAP NEJM** study, which was among **vaginal birth patients. MFMU study (NCT03364491)** is ongoing for **CS prophylaxis** and **WOMAN2 (NCT03475342)** is ongoing for **vaginal prophylaxis in anemic women**. **TRAAP2** is also **studying prophylaxis in CS women (NCT03431805)**.

Discussion and Sharing of Experiences (outside of presentation by Tanzania)

The following are some common themes from verbal and written comments from Afghanistan, Ethiopia, Rwanda, Malawi, Liberia, South Africa, Kenya, and India.

- TXA
  - Guidelines are generally available, but vary in standardization and implementation.
  - Ethiopia has guidelines and protocols for PPH at CS and for their implementation.
  - Variable availability across countries.
  - Where TXA is not being used or is not readily available, many facilities are using an oxytocin/misoprostol combination for prophylaxis (higher-risk patients) or treatment.

- B-Lynch/compression sutures
  - Use tends to be limited or use is only by specialists.
  - Where nonspecialists have been targeted for training, B-Lynch has had some success.

- Workforce density
  - There are significant challenges across countries.
  - Some noted successes with task shifting (e.g., Tanzania, Rwanda, Malawi, Kenya), but also challenges ensuring standardization of training.
  - Challenges exist around anticipation and planning for management of difficult delivery (e.g., impacted fetal head in second stage of labor).

- **Surgical safety checklist** use to improve surgical outcomes
  - Some noted successes (e.g., Tanzania), but an ongoing challenge in most settings
- Importance of **teams and team performance**, including team-based training/capacity-building
- **Early identification** is a challenge, intraoperatively and postoperatively. There is little or no use of a modified early warning system (MEWS).
- **Data**: Significant challenges with quality data on PPH (often very underreported), and typically not disaggregated by mode of birth.
- Systems issues must be addressed.

- **Strengthening referral pathways and mechanisms**: Assessing and redesigning existing care delivery processes and identifying/addressing barriers and bottlenecks to improve efficiencies along the client pathway within and across facilities.
- **Blood availability and safe, appropriate use** tend to be ongoing challenging in many settings
- **Heat-stable carbetocin**: Kenya is currently revising guidelines and rolling out its implementation
- **NASG**: India cited a pilot project that noted that providers experienced a high level of satisfaction with NASG, felt it was an effective, reliable, easy-to-use, and lifesaving adjunct to usual management protocols, especially in remote facilities. Additional evidence about improving outcomes in PPH can be found at http://www.safemotherhood.ucsf.edu/publications/. In particular, see:

  Escobar M, Fernández P, Carvajal J, Burgos J, Messa A, Echavarria M, Nieto A, Montes D, Miller S, Hurtado D. Impact of nonpneumatic antishock garment in the management of patients with hypoperfusion due to massive postpartum hemorrhage. *J Matern Fetal Neonatal Med*. 2019; Jan 11:1-171.

  Challenges: New technology, not everyone is familiar with its use, not readily available, not very cheap (approximately US $145), need for maintenance, issues around cleaning, storage, and timely return to the facility.