

POST PARTUM HAEMORRHAGE- ROLE OF ANAESTHETIST

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Post partum haemorrhage (PPH) accounts for around 28% of maternal deaths in developing countries¹ that is 12500 deaths each year². There are about 125 million births annually in the developing world², so the risk of maternal death from PPH is approximately 1 in 1000 deliveries. Primary PPH (blood loss > 500 ml in first 24 hours) is said to occur after 5% of deliveries. Blood loss after delivery is extremely difficult to measure and PPH may best be defined by a fall in haematocrit or by a need of transfusion.

Risk factors for PPH include maternal obesity and a large baby, in addition to the well-known factors such as APH and multiple pregnancy. Risk factors are relevant to discussions about the place of delivery and the need for extra vigilance, but PPH also occurs unpredictably in low risk women. Routine measures as oxytocin administration reduce risk of PPH by 40%³.

Our discussion here shall focus on the relentless haemorrhage that could follow deliveries and is uncontrolled despite the routine 3rd stage measures. Another category is inclusive where an unspectacular bleeding persists and is noticeable only when compensatory mechanisms start failing and blood pressure starts falling. This state may invoke emergency intervention and a detailed preliminary assessment in operation theatre is required. The midwife, followed by the obstetrician in charge, initiates basic management protocols, but the advanced management rapidly becomes impossible without the involvement of a competent anaesthetist.

The major cause of PPH is uterine atony that accounts for 92% of all cases, followed by genital tract trauma 7% and coagulation disorders in 1%⁶. An intravenous infusion should be set up as a first step, followed by abdominal palpation, after which if uterus is found well retracted, next step should be exploration and repair of a cervical or vaginal tear. It is based upon three pre-requisites, good light, good assistance and good relaxation (anaesthesia). Immediate repair can

often offset dire consequences.

If the uterus is atonic and continues to relax despite attempts to 'rub up' contractions, the bladder should be emptied and intravenous injection of inj. Syntometrine or ergometrine should be given. Persistent uterine atony may be secondary to retained products of conception and exploration of the cavity should be carried out carefully, avoiding any chances of uterine perforation, preferably under general anaesthesia, while resuscitative measures continue. Intravenous oxytocin should be infused usually 20 units in 500 ml saline at a rate not exceeding 100 milliunits / min. Syntometrine may be repeated at this juncture.

If the uterus still remains unresponsive, next step is 250ug of Carboprost (Prostin F2 alpha analogue) injection either intramuscularly or intra myometrial. ⁴Anaesthetist should be ready for a hike in mean arterial blood pressure. If necessary, injection may be repeated at 90 min intervals. Direct intramyometrial route is faster and more effective. If Carboprost is unavailable Gemeprost pessary into the uterus combined with uterine compression can be tried. Misoprostol (prostin E1 analogue) is a much cheaper choice and is readily available as it is used primarily in cases of peptic ulcers, 400-600 mcg pessaries placed per rectum can do wonders⁵. Maximum dose is 1000 mcg. These drugs should not only form part of maternity unit emergency cupboard, but should also be readily available in obstetric operation theatres. When carrying out bimanual uterine compression the hand in vagina should elevate the uterus to keep the uterus and thus uterine artery under stretch. Compression of the aorta against sacral promontory may be a useful emergency measure.

Obstetric haemorrhage can quickly lead to coagulation disorders. A team approach to management is essential with an early involvement of haematologist. Anaesthetist participation is invaluable for fluid replacement. Monitoring in this situation is of paramount importance. Besides PaO₂, NIBP and ECG monitoring

is mandatory. Invasive monitoring of BP is preferable and the volume replacement assessment is best done by central venous pressure line. Initially crystalloids (Ringer's solution) followed by colloids (e.g. Haemaccel) should be given. The skills of the anaesthetist in intravenous techniques, and rapid fluid replacement becomes the deciding factor. Large amounts of blood may have to be transfused rapidly, and the whole staff of OT must work in full gear and in a team spirit. Fresh frozen plasma and platelet transfusion may be needed to rectify the coagulation disorders. Dextran is contraindicated in obstetric haemorrhage on account of interference with platelet aggregation and difficulties in cross matching of blood⁶. Clinicians may find it helpful to know that very few patients die of lack of circulating red cells but majority is lost due to poor tissue perfusion resulting from hypovolaemia.

In most cases these measures shall control haemorrhage but if not, hysterectomy must be considered. Performing this operation too late may put the woman at an unnecessary risk if she is developing coagulation disorder. Timely hysterectomy is particularly important where woman refuses transfusion⁹. In an unstable patient subtotal hysterectomy (leaving cervix behind) is an acceptable alternative.

There are however certain techniques which if used judiciously, may avoid the need of hysterectomy. One among these is uterine packing, which has recently re-emerged as an option after a period of disrepute¹⁰. Removal of packing is a worrisome moment because of the concern that raw uterine surface will bleed again. One case report has described a sterile plastic drape fashioned into a bag and inserted into the lower segment and vagina before being packed with 2 lengths of 4.5x48 inch gauze packs soaked in povidine-iodine.

Following similar principals in another report, a Sengstaken-Blakemore tube was inserted in the uterus and the gastric balloon was inflated with 300ml saline. The balloon was deflated after 24 hours slowly. The use of Foley urinary catheter with a large bulb has also been described⁹.

There are also surgical techniques for control of haemorrhage without resort to hysterectomy⁹. Ligation of the internal iliac artery is well known but infrequently performed. Though there is extensive collateral circulation in the pelvis however the skill prevents hysterectomy in only 50% of cases. The complications include laceration of internal iliac vein, accidental ligation of external iliac artery, ureteric injury and death. Hysterectomy is usually safer and quicker!

Direct ligation of uterine artery has been described for uterine haemorrhage following cesarean section. Bilateral mass ligation of the uterine arteries and veins include 2-3 cm of the myometrium, at a level about 2-3 cm below lateral ends of the uterine incision. Uterine viability is maintained by collateral circulation, and technique can be followed by normal mensus and pregnancy.

The B-Lynch brace suture is a definite option where bleeding is diffuse such as in cases of uterine atony or coagulopathy, profuse bleeding, placenta accreta or increta. Where no bleeding point is observed then bimanual compression is first tried to assess the potential chance of success of the B-Lynch suturing technique. The vagina is swabbed out to confirm adequate control of bleeding. A No.2 chromic catgut on a 70 mm round bodied hand needle is used to throw brace suture over the uterine fundus.

The situation is much aggravated in a country like Pakistan where 78% women are anaemic. 76% still deliver at home and the concept of essential obstetric care is in its infancy¹¹. The lack of transport facilities delays further the access to skilled care. Revival of such patients needs a thorough commitment both on the part of obstetrician as well as anaesthetist. All these steps have to be measured well before they are invoked. Move over time is crucial in such circumstances. A lot of patience, understanding and skill on part of the anaesthetist is required in such situations. Timely and firm decisions can work wonders but they only emerge from a team approach!

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FILLERS

A L(ATIFA) C

An officer was posted out. He sent a signal message to his new unit, 'Arriving on 17 May. Request arrange family *and* accommodation. Matter most urgent'.



A gynaecologist submitted a scientific paper to a journal for publication. As per policy of the journal, the editor asked her for a passport size photograph, to be published with the bio data. The gynaecologist was reluctant to get her photograph published, so she asked, " Will my *thumb impression* be enough?"