

# Postpartum haemorrhage

## When the oxytocics fail...



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**Gynaecological oncologists view postpartum haemorrhage (PPH) very differently from the average obstetrician because they are usually only involved in cases where all the conservative managements have failed. This must be kept in mind when reading this paper.**

Postpartum haemorrhage is common, with an incidence in Australia of between five and ten per cent,<sup>1</sup> and most are handled without great drama and with little morbidity. We are all familiar with the three most common causes, namely uterine atony, genital tract trauma and retained products, and the need to direct initial management towards:

- elucidation of the cause;
- treatment with appropriate therapy, whether that be uterotonics, suturing, evacuation of retained products or a combination thereof; and
- appropriate resuscitation of the patient, including siting of large bore venous cannulae, infusion of intravenous fluids and blood and sending baseline blood tests.

It must be remembered that PPH remains an important cause of maternal morbidity and mortality, even in developed countries. It is consistently in the leading three direct causes of maternal mortality in developed countries (alongside thrombo-embolic disease and hypertensive diseases of pregnancy) and was the commonest cause of maternal mortality in the most recently reported Australian triennium, 1997 to 99.<sup>2</sup>

There is an ever increasing armamentarium of treatments for PPH but this can be a double edged sword because by the time all possible conservative approaches have been tried and failed, the

woman may be in extremis. Furthermore, previously fit young women can tolerate very large blood losses before suddenly decompensating with little or no warning. Medical treatments, beyond the staples of syntocinon and ergometrine, include:

- Misoprostol,
- Prostaglandin F2 alpha, and
- Activated Factor VII.

Surgical options include:

- examination under anaesthesia with evacuation of any retained products;
- uterine packing or balloon tamponade;
- B-lynch compression suture or ligation of uterine or iliac vessels;
- in some centres there is also the option of interventional radiology to perform uterine artery embolization<sup>3</sup>; and
- generally as a last resort, hysterectomy.

***'With the increasing range of treatment options for PPH, there is also a great danger of pursuing conservative measures for too long'***

These measures involve widely varying degrees of skill and as a result, some are neither universally available or within the scope of the average practitioner to perform. The evidence of their utility in PPH also varies, from case studies of activated factor VII<sup>4</sup>, larger

retrospective reviews and databases for techniques such as the B-lymph suture<sup>5</sup> and one small randomised trial of Misoprostol versus uterotonics, where Misoprostol decreased the need for further medical treatment without showing a difference in surgical treatments for intractable bleeding<sup>6</sup>. Given the relatively uncommon and usually acute nature of ongoing PPH, with the need for urgent action it is unlikely substantial randomised controlled trials will ever be performed and the data we have will continue to be subject to bias in the form of the tendency to publish positive results.

With the increasing range of treatment options for PPH, there is also a great danger of pursuing conservative measures for too long, allowing the patient to enter the spiral of hypothermia, metabolic acidosis and coagulopathy. It is frequently only when this triad is established that help, in the form of an oncologist, is called. There is usually enormous pressure felt by the clinician to preserve reproductive capacity, especially after delivery of the first child, but temporising regarding hysterectomy in the face of significant bleeding may greatly increase short-term morbidity, will not necessarily avoid the need for hysterectomy and risks a maternal death.

In a review which we have undertaken of our hospital's most recent peripartum hysterectomies, five of 17 occurred more than six hours postpartum, with four of the five having over five litres of blood loss (compared with one of 12 other cases) and consequent substantially increased need for blood products. There was also a higher rate of peri and post-operative complications and one death from uncontrollable haemorrhage.

Not long ago, the senior author, Professor Donald Marsden, was involved in the management of a PPH in a developing country. It was about 10pm and the woman had delivered vaginally about three hours before. She had an immediate PPH which was managed by uterine massage and further oxytocics to no effect. She continued to bleed heavily. An exploration of the genital tract did not reveal lacerations and curettage did nothing to stop the bleeding. At the time he saw the patient she had a pulse of 160, a blood pressure of 60 systolic and her blood had the appearance of raspberry cordial. No measure of blood loss had been made but the drapes, the bed and the floor indicated it had been substantial! No laboratory services were available within the hospital at that time of night. The husband had been dispatched to the blood bank with a relative to give blood but none was immediately available.

A very reluctant anaesthetist put her to sleep and a hysterectomy was performed by equally reluctant surgeons. Professor Marsden fully expected that she would die. Some eight hours later she was sitting up and complaining about the crowded recovery room and demanding transfer to a ward. She had received two units of blood and had a haemoglobin of six! This woman survived precisely because there were no other management options available. While the other approaches to control of PPH available in Australia may have worked and prevented the situation I was faced with, had they failed, more time would have been lost and the situation could have become even more critical.

When a short trial of the standard approaches to managing PPH have failed, the wise clinician will call for help and actively involve others to help cope with an impending major emergency. Depending on the setting, this will invariably involve anaesthetic staff and the local blood bank, and may also mean a gynaecological oncologist, general surgeon, experienced colleague, haematologist, physician and intensivist.

The anaesthetist is vital in ensuring the patient does not decompensate while haemorrhage is being controlled and needs a clear message from the obstetrician as to the gravity of the situation in order to ensure appropriate blood products early. Activation of local 'massive transfusion' protocols (if they have been

formulated) may also be very helpful. Other surgical colleagues provide not only technical assistance but also the advantage of extra help in assessing the most appropriate way to control the bleeding. Where large volume transfusions are envisaged or coagulopathy is developing (and it often develops much earlier than one expects), the help of a haematologist is invaluable. It is our strong belief that if the use of activated Factor VII is envisaged, a haematological consultation is essential to ensure the optimal management of the coagulopathy.

## ***'When a short trial of the standard approaches to managing PPH have failed, the wise clinician will call for help'***

When disaster has struck and woman is at risk of imminent death, a desire to perform technically perfect surgery can also be fatal. While it is obviously desirable to ensure the safety of the bladder, ureters and rectum, the principal goal of the surgery is to control the bleeding. In the truly desperate situation, risks must be taken that would be unacceptable in elective surgery. This is the concept of 'damage control surgery'.<sup>7</sup> It involves doing what is necessary to control the acute situation and save life, then returning if necessary at a later time to repair surgical complications. Although help of colleagues is extremely useful, if it means the patient haemorrhages an extra one or two litres of blood while waiting for their arrival then consider commencing with surgery with which you have experience (such as hysterectomy) without them, rather than lose control of the situation. If complications ensue but the patient is alive to have them fixed, both patient and you are both still better off!

Our thesis is that in the management of PPH there must be a clear understanding at every step of the way that the condition is potentially fatal. The preservation of fertility should not be at the risk of a maternal death. There is no substitute for a live mother with a good long-term outlook, even if that is at the cost of a hysterectomy and short-term surgical complications. The lethal triad of hypothermia, metabolic acidosis and the resulting coagulopathy are usually the result of delay, often occasioned by well meaning but misguided conservatism. Optimism is fine, but realism is essential in managing this condition.

## **References**

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