

# The uterine sandwich approach in the management of secondary postpartum haemorrhage

Keerthi Perera<sup>1</sup>

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## Introduction

Secondary postpartum haemorrhage is any abnormal or excessive bleeding from the birth canal occurring between 24 hours and 12 weeks postnatally. In developed countries, two per cent of postnatal women are admitted to hospital with this condition, half of them undergoing uterine surgical evacuation. Secondary postpartum haemorrhage is most often due to retained parts of the placenta or membranes and or to infection (Dewhurst 1966). The correct management of secondary postpartum haemorrhage is therefore an important as significant morbidity/mortality can occur if not well managed. The following case report highlights this fact.

## Case

This was a 29 year old para 3 (3 normal deliveries with the first pregnancy complicated by a postpartum haemorrhage that required an evacuation of retained products). She presented to us initially 9 days postpartum with vaginal bleeding and was treated initially with Co-amoxiclav. She re-presented on day 14 postnatally with worsening of her bleeding and abdominal pain. She was admitted and had an ultrasound scan which confirmed retained products of conception. She was thus commenced on IV antibiotics and listed for an evacuation of retained products the following day. At surgery she was found to have a 14 weeks sized uterus and so a size 10 catheter was used for the evacuation. She required bi-manual compression initially but the bleeding settled and she was taken to the ward for the night. Overnight she continued to trickle some blood and by the morning she complained of abdominal pain again and was found to be pale and tachycardia. She also had a tender distended abdomen and the uterus palpated above the umbilicus. A repeat ultrasound that morning suggested a uterine perforation and internal haemorrhage. Her haemoglobin level was found to have dropped from 90 to 43 overnight. She was taken back to theatre that afternoon and had a midline laparotomy only to find that there was no perforation but that she had a 26-27 week sized uterus.

The uterus was evacuated with suction and following that she started to bleed heavily. Bimanual compression and oxytocic medications (Syntocinon 40 IU IV infusion, ergometrine, haemobate 250 microgramme IM×3, misoprostol 800 mg per rectum) failed to contract the uterus and she continued to bleed. A Bakri balloon was inserted into the uterine cavity though this did not stop the bleed. In addition a modified B-Lynch uterine brace suture was also inserted on either side. Haemostasis was then obtained. Total blood loss was 3.5 litres. The cause of her bleeding was felt to be multifactorial including uterine atony, the presence of an intra-uterine clot and the subsequent discovery that her platelets were 65. She started to bleed from the abdominal wound incision and hence a Robinson's drain was left in situ. She had a total of six unit transfusion. The Balloon was removed the following 24 hours and the drain was left for 48 hours. She made an uneventful recovery and was discharged 5 days afterwards.

## Discussion

In the 2003-2005 report of the UK Confidential Enquiries into Maternal Deaths, haemorrhage was the third highest direct cause of maternal death<sup>5</sup>. Even in the UK, the majority of maternal deaths due to haemorrhage must be considered preventable. The causes of postpartum haemorrhage are classified as the four "T's"; Tone (abnormalities of uterine contraction), Tissue (retained products of conception), Trauma (of the genital tract) and Thrombin (abnormalities of coagulation). If atony is suspected management is usually divided into medical and surgical management. Medical management includes: Syntocinon 5 units by slow intravenous injection (may have repeat dose), ergometrine 0.5 mg by slow intravenous or intramuscular injection (contraindicated in women with hypertension), syntocinon infusion (40 units in 500 ml Hartmann's solution at 125 ml/hour) unless fluid restriction is necessary, carboprost 0.25 mg by intramuscular injection repeated at intervals of not less than 15 minutes to a maximum of 8 doses (contraindicated in women with asthma), and misoprostol 1000 micrograms rectally.

Surgical management involves balloon tamponade, haemostatic brace suturing (such as using procedures described by B-Lynch or modified compression sutures<sup>2</sup>), bilateral ligation of uterine arteries, bilateral

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<sup>1</sup> *Consultant Obstetrician and Gynaecologist, Dorset County Hospital, Dorchester, United Kingdom.*

*E-mail: abhayakeerthi@yahoo.com*

ligation of internal iliac (hypogastric) arteries and selective arterial embolisation followed by hysterectomy if the bleeding cannot be controlled.

Secondary postpartum haemorrhage as a general rule is often associated with endometritis. Antibiotics are usually the treatment of choice and most units will have their own protocols as to what the first line of antibiotics should be<sup>3</sup>. Medical care should include blood tests (especially a CRP if the patient is unwell), low and high vaginal swabs and blood cultures if pyrexial. Surgical measures are only considered if antibiotics fail to stem the bleeding. Interestingly the surgical procedures highlighted above can also be used in the management of a massive haemorrhage as the same principles still apply. The combined therapy which we adapted here has been described by Nelson WL, O'Brien JM<sup>1</sup>. They looked at 5 women who required the "sandwich approach" (combination of the Bakri balloon and B-lynnch modified compression suture) at caesarean delivery in order to control postpartum haemorrhage. Their overall conclusion in their case series was that placing an intrauterine Bakri balloon in conjunction with the

B-lynnch uterine compression suture was successful in treating uterine atony<sup>5</sup>. It was of interest that this had not been described before in cases of a massive secondary postpartum haemorrhage.

## References

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