

Obstetrics and Gynaecology

Internal iliac artery balloon occlusion during planned caesarean section

Information for women who are considering internal iliac artery balloon occlusion to prevent excessive blood loss during planned caesarean section

Introduction

Some caesarean sections are associated with increased risk of major bleeding due to the location of the placenta in the wall of the uterus, obstructing the neck of the uterus or large fibroids. Internal iliac artery balloon occlusion is a procedure which may help to reduce the amount of blood loss.

What is internal iliac artery balloon occlusion?

The main blood supply to the uterus comes from the uterine arteries via the internal iliac arteries on each side of the pelvis. The procedure entails deflated balloons being placed at an appropriate site before the operation to deliver the baby. Then, if there are any bleeding complications during the surgery, the balloons can be instantly inflated within the internal iliac arteries in order to stop the blood flow and control the bleeding, therefore preventing harm to the mother. At the end of the operation, the balloons are usually deflated so that normal blood flow is restored to these arteries.

Why should I consider internal iliac artery balloon occlusion?

Preventing excessive blood loss during surgery is very important. At its worst, excessive blood loss can be fatal. Minimising blood loss during surgery will help with saving lives as well as reducing blood transfusion requirements, thus reducing the possibility of complications and length of stay in hospital.

How do I prepare for internal iliac artery balloon occlusion?

Preparation is the same as for a routine caesarean section. At a preoperative anaesthetic planning appointment, you will be required to have some blood tests and a



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screening test for infection (nasal and groin swabs for MRSA screen). You will be given fasting advice by your anaesthetic team and you will be provided with two antacid tablets, one to be taken the night before and one on the morning of the operation.

What type of anaesthesia will I have for the procedure and for the caesarean operation?

Most patients will be recommended to have an epidural anaesthetic inserted in the maternity theatre before having the balloon catheters inserted in the Interventional Radiology suite. This provides good pain relief for the iliac balloon insertion, whilst staying awake and minimising anaesthetic to your baby. After iliac balloon catheter insertion, you will return to maternity theatre for your caesarean operation under either continuation of the epidural (so you are awake but numbed by the epidural drugs) or general anaesthesia (you are asleep). The exact anaesthesia plan can be variable, as each plan is tailored to take into account your wishes and your medical condition. These plans will be made with you during an anaesthesia assessment before the day of surgery. Further information about anaesthesia for caesarean section is available at www.labourpains.com.

What actually happens during internal iliac artery balloon occlusion?

Most commonly, we site an epidural in maternity theatre and then transfer you to the Interventional Radiology department for the placement of the iliac balloons.

- A midwife and the anaesthetist will accompany you to the radiology department and ensure that your baby is monitored as much as possible during the procedure.
- You will lie on your back on the x-ray table.
- The skin in the groin area will be cleaned with antiseptic and draped with sterile towels. Your anaesthetic should enable this procedure to be done without any pain.
- The radiologist will puncture the arteries in the groin with a needle and use this to insert a tube (called a catheter) into the artery.
- Using the X-ray machine, the radiologist will steer the catheter into the internal iliac artery and check it is in the right place.
- This procedure will be done on the right and the left sides in turn.
- Once the balloon catheters have been placed, they will be secured with a dressing to remain in place until after the operation to delivery your baby has been completed safely.
- You will then be transferred back to the obstetric theatres for the caesarean section.

The obstetrician will then start the caesarean section, which is either completed under a general anaesthetic (asleep) or the epidural (awake, but without pain). As stated

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earlier, the decision on which anaesthetic will be best will be discussed with you and your partner.

After the baby has been delivered, the Interventional Radiologist may, in close consultation with the surgeon and anaesthetist, inflate the balloon at the tip of each catheter to block blood flow and thus reduce blood loss while the operation is completed. At the end of the procedure, the Interventional Radiologist will remove the balloons from the groin and apply pressure to the groin for a few minutes to prevent bleeding and bruising. The Interventional radiologist may insert a special closure device to help close the hole in your artery more securely and aid a faster recovery.

Will it hurt?

There should not be any pain associated with the procedure. If you do feel anything, you must inform the Interventional Radiologist or Anaesthetist. After the procedure you may have some bruising in the groin which may cause some aching or discomfort, which should resolve over a period of a few days.

How long will it take?

Placing the balloon catheters takes about 40 minutes. The caesarean operation takes 1-2 hours.

What happens afterwards?

After the tubes have been removed from the groins, the midwives will monitor your pulse and blood pressure and inspect the groin puncture sites from time to time. The midwives will make sure that any pain is adequately controlled.

What are the risks or complications?

- Some bruising at the groin puncture sites is inevitable. This generally settles down without further treatment.
- Very rarely, more severe complications occur at the puncture site. These include blockage of the artery to the leg, or a tear in the wall of the artery causing a painful swelling at the groin. These complications may require a further surgical operation to repair the artery.
- As part of this procedure, you and your baby will be exposed to X-ray radiation. The X-rays allow your doctor to place the catheters and balloons in the right place. The dose of radiation required will be kept as low as is absolutely necessary and the x-ray machine is routinely turned to a low dose setting. There is a theoretical risk that exposure to radiation can increase the chance of you or your baby developing cancer at a later date. However, this risk is very low compared with the potential benefits of the procedure.
- The risks of the anaesthetic/caesarean section will be discussed by an anaesthetist/obstetrician in charge of your care.

How effective is internal iliac artery balloon occlusion?

It is difficult to be certain how effective internal iliac artery balloon occlusion is. On the basis of experience gained over several years we believe that internal iliac artery balloon occlusion is helpful for the few mothers who have a much higher risk of bleeding complications. When there are clear potential issues or risks from undertaking surgery by caesarean section to deliver your baby, helping reduce the blood loss using such balloons is a good way to reduce requirement for transfusion of blood and blood products and reduce the risk of complications generally.

Lastly

Some of your questions should have been answered by this leaflet, but remember that this is only a starting point for discussion about your treatment with the doctors looking after you. Further information can be obtained by contacting the Radiology Department on **02476967161** or your obstetric/anaesthetic teams.

Please satisfy yourself that you have received enough information about the procedure, before you sign the consent form.

The Trust has access to interpreting and translation services. If you need this information in another language or format please contact and we will do our best to meet your needs.

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