

## Maternity

# Internal iliac artery balloon occlusion during planned caesarean section

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 blood loss.

### What is internal iliac artery balloon occlusion?

The main blood supply to the uterus comes from the uterine arteries through the internal iliac arteries on each side of the pelvis. The procedure requires 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 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 consider internal iliac artery balloon occlusion?

Preventing excessive blood loss during surgery is very important. At its worst, too much blood loss can be fatal. Minimising blood loss during surgery will help save lives and reduce blood transfusion requirements, so reducing the possibility of complications and length of stay in hospital.

### Preparing for internal iliac artery balloon occlusion

Preparation is the same as for a routine caesarean section. At a preoperative anaesthetic planning appointment, you will have blood tests and a 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 given 2 antacid tablets, 1 to be taken the night before and 1 on the morning of the operation.



## Anaesthesia

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, while 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 (you are awake but numbed by the epidural drugs) or general anaesthesia (you are asleep). The exact anaesthesia plan depends on your wishes and medical condition. These plans will be made with you during an anaesthesia assessment before the day of surgery. More information about anaesthesia for caesarean section is available at [www.labourpains.org](http://www.labourpains.org)

## What happens during internal iliac artery balloon occlusion?

Usually, we site an epidural in maternity theatre and then take 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 make sure 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 taken 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 earlier, the decision on which anaesthetic will be best will be discussed with you and your partner.

## Patient Information

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 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 from the procedure. If you do feel anything, you must tell the Interventional Radiologist or Anaesthetist. After the procedure, you may have some bruising in the groin which may cause aching or discomfort, which should go away after a few days.

### **How long will it take?**

Placing the balloon catheters takes about 40 minutes. The caesarean operation takes 1 to 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 controlled.

### **What are the risks or complications?**

- Some bruising at the groin puncture sites is unavoidable. This settles down without any more treatment.
- Very rarely, more severe complications happen 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.
- During the procedure, you and your baby will be exposed to X-ray radiation. The X-rays helps your doctor place the catheters and balloons in the right place. The dose of radiation will be kept as low possible. Even though there is a very small chance that X-rays could cause problems like cancer later, the benefits of the procedure are much more important.
- The risks of the anaesthetic and caesarean section will be discussed by an anaesthetist or 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. Based on 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.

## Consent

Some of your questions might be answered in this leaflet, but this is just the start of discussions with your doctor. If you want to know more, you can call the Radiology Department on 024 7696 7161 or ask your obstetric or anaesthetic teams.

Make sure you understand everything 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 024 7696 7161 and we will do our best to meet your needs.

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### Document History

Department:	Maternity
Contact:	27161
Updated:	September 2025
Review:	September 2028
Version:	2
Reference:	HIC/LFT/2314/18