

# Having an artery balloon occlusion to reduce blood loss during high risk caesarean section

Department of Radiology

Information for Patients

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## Introduction

This leaflet tells you about the procedure called artery balloon occlusion. It explains how the procedure is carried out and what the possible risks are. If you are having a balloon occlusion as part of a pre-planned caesarean section, then you should have plenty of time to discuss the situation with your consultant obstetrician and the doctor who specialises in X-rays (the interventional radiologist) who will be doing the procedure.

## What is artery balloon occlusion?

During artery balloon occlusion, fluid-filled balloons are inflated in an artery to stop the blood flow.

The main blood supply to the uterus comes through the internal iliac arteries. These supply blood to the legs, pelvis reproductive organs and other organs in the pelvis.

A doctor inserts a small tube, called a balloon catheter, into the internal iliac arteries before the caesarean section starts.

If there is any major bleeding during the caesarean section, the balloons are inflated for a short time (temporarily) to block the arteries. This reduces the blood flow to the womb (uterus) and prevents bleeding.

The balloons are deflated and taken out after your delivery so that the blood can flow again.

**Health information and support is available at [www.nhs.uk](http://www.nhs.uk)  
or call 111 for non-emergency medical advice**

Visit [www.leicestershospitals.nhs.uk](http://www.leicestershospitals.nhs.uk) for maps and information about visiting Leicester's Hospitals  
To give feedback about this information sheet, contact [InformationForPatients@uhl-tr.nhs.uk](mailto:InformationForPatients@uhl-tr.nhs.uk)

## Why should I consider internal iliac artery balloon occlusion?

If the placenta is in an abnormal position in the uterus it could cause serious or even life-threatening bleeding when the baby is being delivered. Balloon occlusion may help to reduce:

- the amount of blood loss,
- the need for blood transfusions,
- the possibility of needing to have the uterus taken out (hysterectomy),
- the risk of death and reduce length of stay in hospital.

## Is artery balloon occlusion always successful?

In some cases artery balloon occlusion is not successful. If this happens the arteries in the uterus may need to be blocked within a few hours of delivery. This is known as uterine artery embolisation.

In some instances, if severe bleeding occurs despite measures being taken to prevent this or the surgeon decides that the uterus is at high risk of bleeding, it may be necessary to take out the uterus (emergency hysterectomy).

## Asking for your permission (consent)

The doctor who referred you should have talked to you about the reasons for this procedure and any other options.

You have been referred to an interventional radiologist for this procedure. Radiologists are doctors who have specialised in imaging and X-ray treatments. They will confirm that you understand why the procedure is being done, its potential risks and what the chances of success are. You will then be asked to sign a consent form to confirm this. **You should feel that you have had enough explanation before you sign the consent form.**

If after talking to the hospital doctor or Radiologist you do not want to have the procedure then you can decide against it at any time.

## Important information

You need to tell the Radiology Department when you get your appointment if you:

- **are allergic to iodine**, have any other allergies or suffer from asthma.
- **have reacted previously to an intravenous contrast liquid**, the dye used for kidney X-rays and CT scanning and X-rays of your heart and blood vessels.
- **are on renal dialysis or have any problems with your kidneys.**
- **have diabetes.**
- **have bleeding disorders such as haemophilia.**

## Important information about blood thinners

If you are taking medication that thins the blood (anticoagulants or antiplatelets) it may need to be stopped or replaced with a different one for a few days.

**Common examples of these drugs include aspirin, warfarin, clopidogrel (Plavix®), apixiban (Eliquis), rivaroxaban (Xarelto), ticagrelor (Brilinta), Dalteparin and Heparin.**

Please call the radiology department for advice by phoning the number on your appointment letter as soon as possible.

You will be asked what blood thinning medication you are taking, how much you take (the dose), and what you are taking it for.

## Getting ready for the procedure

### On the day of the procedure:

You will be admitted to the ward for this procedure.

You should follow the instructions sent with your admission information about contacting the ward and when you should arrive on the ward.

You will be given clear instructions from your medical, nursing, and midwifery team about how to get ready for your caesarian section and possible balloon occlusion.

### When you are admitted to the ward:

Your anaesthetist will talk to you about the methods of pain relief needed for your procedure. This might include an epidural or general anaesthetic for all or part of the procedure.

A thin tube called a catheter will be placed into your bladder.

The obstetrician will talk to you in detail about your operation and the delivery of your baby.

## What happens during the procedure?

- You will have the procedure in the operating theatre.
- Everything will be kept sterile. Your skin will be cleaned with antiseptic and some of your body will be covered with sterile sheets.
- An injection of local anaesthetic will be given to the skin in the area between your tummy and each leg (both groins). This will sting for a short time before feeling numb.
- If your caesarean section is planned for a general anaesthetic, the balloons may be placed when you are asleep.
- When the local anaesthetic in your groin has taken effect, the Radiologist will place a balloon catheter into the artery in each groin and move it into position under X-ray guidance.
- Contrast liquid (a colourless liquid that shows up on X-rays) will also be used to help the Radiologist see the catheter.

- If there is major bleeding during the caesarean section, the small balloons may be inflated to temporarily block the internal iliac arteries.



Balloon catheter inserted into an artery

Balloon inflated to stop blood flow

- After your baby has been delivered, the balloons will be deflated. If there is no major bleeding at this time then the balloons will be removed completely.
- If there is still major bleeding after your delivery then the Radiologist may control this by directly injecting tiny particles or metal coils to block them. This is called uterine artery embolisation. This may happen in the operating theatre, or in an interventional radiology room.
- Sometimes this is not possible or successful and a hysterectomy may still be needed.

## How long will the procedure take?

Every patient is different. It is not always easy to know how complex or simple the procedure will be. Usually balloon placement takes about 15 minutes, whilst uterine artery embolisation (if it is needed) may take about 1 hour. This will be as well as the time needed for your caesarean section.

## What happens after the procedure?

This will depend mostly on the type of care you require after your caesarean section.

After this procedure you will be asked to lie flat for at least 4 to 6 hours. Nurses and Midwives on the ward will carry out routine observations such as taking your pulse and blood pressure.

The skin entry point in your groin will heal very quickly. The nurses will be checking the wound regularly, however, if you have any oozing or swelling in your groin, you should tell your nurse straight away.

You may expect to have some bruising and tenderness in the groin for a few days, and you might feel a small lump or bruise which should disappear after a few weeks.

## Are there any risks or complications?

As with any procedure or operation, complications are possible.

We have included the most common risks and complications related to the balloon occlusion procedure in this leaflet. The possibility of these complications occurring will vary for each patient and the possibility of these complications happening to you will be discussed with you before you sign the consent form.

These complications are in addition to those described to you by your obstetrician about your caesarean section procedure.

**Bruising** - There will be a bruise around the site where the needle has been inserted. This is quite normal and will normally go away on its own. There is a chance that the bruise may become large and uncomfortable, but this does not happen very often. If a large bruise develops there is a risk of it getting infected. This may then need treatment with antibiotics or surgery. Some bruising and tenderness is to be expected.

The radiologist doing your examination will be able to tell you how often problems with bruises occur in your hospital, and how they are treated.

**Side effects from contrast liquid** - Some patients get a warm feeling and a metallic taste when the injection is given and sometimes may feel sick. If you do get these feelings they usually last about one minute. Please let the staff who are with you know if you get these feelings

**Allergic reaction to contrast liquid** - Some patients may be allergic to the contrast liquid and may have symptoms such as feeling or being sick (nausea or vomiting), or a rash. If you get any of these symptoms at the hospital, tell the doctor, nurse or other staff looking after you. If you develop symptoms at home you should contact your GP or call the NHS helpline on 111.

**Blood vessel injury** - accidental damage to the arteries can cause internal bleeding which may also require urgent surgical treatment.

**Blood clots** - because the balloon catheters may be sitting in your arteries for many hours during the operation, there is a risk that blood clots can form. This can lead to circulatory problems in your legs. These may need to be treated by another X-ray procedure or an operation. If it is not possible to repair the damage then there is a risk to the limb which could result in amputation.

**Damage to arteries by the closure device** - at the end of the procedure the Radiologist will remove all the catheters from your arteries. They will then use a closure device to prevent bleeding in your groins. These can damage the artery and need an operation to fix. The risk of this is less than 1 in 100 people (less than 1%).

### **Extra complications if you have uterine artery embolisation:**

- **Infection** which may need antibiotics. If it is severe, a hysterectomy may be needed. The risk of this is 2 in 100 women (2%)
- **Post embolisation syndrome** - this is the body's normal reaction to embolisation, and causes mild pain and a temperature. This usually gets better within 24 to 48 hours. If it does not it may mean there is an infection which will need to be treated.
- **Non-target embolisation** - This is where the blood supply to areas other than the uterus can be blocked by accident. Although rare the consequences might include damage to: pelvic organs (such as the bladder or bowel); the nerves or muscles responsible for power or sensation to the legs; the blood supply to the legs. This type of complication may need surgical treatment.
- **Ovarian failure** - 1 in 100 women (1%) may experience early menopause and future fertility problems.

## What are the risks from radiation in this procedure?

The amount of ionising radiation used is small. It can cause cell damage which means there is a very small increase in the chance of cancer occurring, many years or even decades after the examination. We are all exposed to natural background radiation every day of our lives. This comes from the sun, food we eat, and the ground. Each examination gives a dose on top of this natural background radiation.

It is estimated that the natural risk of a person in the UK being diagnosed with cancer in their lifetime is 1 in 2 people (50%).

Having arterial balloon occlusion will add a very small additional chance of getting cancer over a lifetime. The risks from major bleeding by not having balloon occlusion may be much bigger. We will take all safeguards to minimise the amount of X-rays you receive.

## What if I need to talk to someone?

### Before the procedure:

- you can contact the Radiology Department on **0116 258 8765** (option 7) - Monday to Friday, 9am to 5pm, excluding bank holidays.
- or you can contact your obstetrician or midwife.

### After the procedure:

Ward staff who will be with you for the caesarean section will be available for any questions or concerns you may have. You will be given advice on aftercare when you are discharged from hospital.

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔  
على هذه المعلومات بلغة أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل

જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

ਜੇ ਤੁਸੀਂ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੁੰਦੇ ਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਹੇਠਾਂ ਦਿੱਤੇ ਗਏ ਨੰਬਰ 'ਤੇ ਟੈਲੀਫੋਨ ਕਰੋ।

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