

Trauma and Orthopaedics

Pelvic and Acetabular Fracture

Introduction

This information leaflet is for patients and their families and carers who have fractured either their pelvis and/or acetabulum (socket of the hip joint) and may require an operation. It explains the treatment options including an operation, potential side effects and risks and general instructions.

The Pelvis

The pelvis is a ring that is made up of a group of bones at the level of your hips which are joined at the:

- Back by the sacrum (tail bone) at the lowest part of the spine
- Front by a cartilage joint (soft tissue) called symphysis

The pelvis protects:

- the bladder
- the bowel
- the sexual organs
- blood vessels and nerves going down the legs

Your body weight goes through the pelvis when you walk or sit.

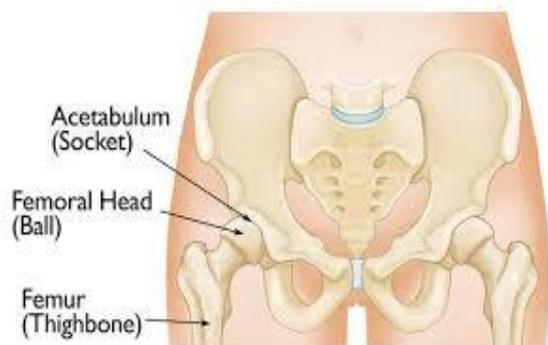


The Acetabulum

The acetabulum is a cup-shaped hollow in the pelvis into which the head of the femur (thigh bone) fits to form a ball and socket joint - your hip joint.



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Pelvic Fractures and Acetabular Fractures

These injuries are not common and are normally a result of:

- road traffic accidents
- falls
- sports injuries (less common)

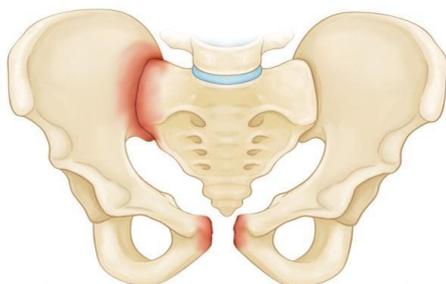
Most common pelvic fractures:

1. the pelvis is crushed from the side, or
2. it is pushed apart from front to back, or
3. one half of the pelvis separates and moves vertically in relation to the other side- this can happen from a fall landing on one foot.

Pelvic fractures can be broken but still stable, or they can be completely unstable. This depends upon the amount of force that it took to break it and in which direction it was broken.

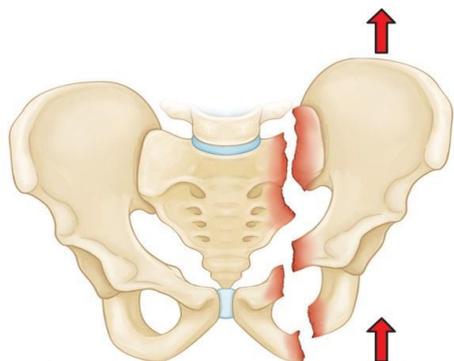
Unstable Pelvic Fractures

This is where there are normally two or more breaks in the pelvic ring and the broken bones do not line up.



Above shows an anterior posterior compression fracture where the pelvis is crushed from the front or back causing the fractured parts to separate

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Above shows a vertical shear fracture where one part of the pelvis moves vertically compared to the other part.

Sometimes fractures need to be examined under anaesthetic to assess the stability. This is known as a EUA (examination under anaesthetic). X-rays and CT scans are also used.

The decision for fixation is dependent upon:

- how far apart the fractured parts are
- how stable the fracture is
- if there are internal organs that could be damaged by the fracture
- your overall health and medical condition

Acetabular Fractures

The acetabulum can break in a variety of ways. It may break into only two segments or it may completely shatter into multiple fragments. However, not all fractures require an operation, and sometimes treatment will involve not walking on the fracture (for example, using crutches) and careful monitoring with x-rays. Occasionally the decision whether to operate or not cannot be made using x-rays or scans (CT scan), and we may need to assess the stability of your fracture using x-rays in the operating theatre.

Mobility

Before your pelvis is fixed you may only be able to roll onto one side, or not sit up more than 30 degrees. The nurses will be able to help you with this. However, if you do not require an operation you may be able to sit up to 90 degrees. The amount of weight you bear through your legs will be discussed with you by the pelvic team.

Surgical Fixation (Operation)

Pelvic surgery is generally performed to restore the fractured parts of your pelvis to as normal a position as possible and to allow the fracture to heal in this position. Ultimately the aim is to allow you to resume your normal activities in as timely a fashion as possible and also to avoid long-term problems such as deformity of your pelvis or arthritis of the joints that hold your pelvis together. Surgery can be done in different ways depending upon the fracture sites. This will be discussed at the time of consent when you sign your form with the pelvic trauma surgeons.

Common Methods of Fixing a Pelvic and Acetabular Injury

Internal fixation

This is done using plates and screws attached to the pelvic bones, when suitable. This prevents movement and keeps the fracture in position, giving the bones the opportunity to heal.

External fixation and IN FIX

This is normally a temporary treatment and is a metal frame that is at the front of the pelvis either outside your body (external fixation), or sometimes the metal frame is constructed inside your body. This is called an IN FIX. This stops the fracture moving and keeps the bones in the correct position.

An external fixator is often changed to definitive internal fixation once the patient is stable.

Total Hip Replacement (THR)

Sometimes an acetabular fracture cannot be put back together, especially when you are older. In which case, a total hip replacement can be done. An internal fixation may be done in combination of the THR.

THR may be indicated in two distinct clinical scenarios; firstly, if an acute acetabular fracture would result in a predictably poor outcome if treated with just an open reduction and internal fixation (ORIF), and secondly (and most commonly) after a patient develops post-traumatic arthritis after either non-operative or operative treatment of an acetabular fracture.

The operation

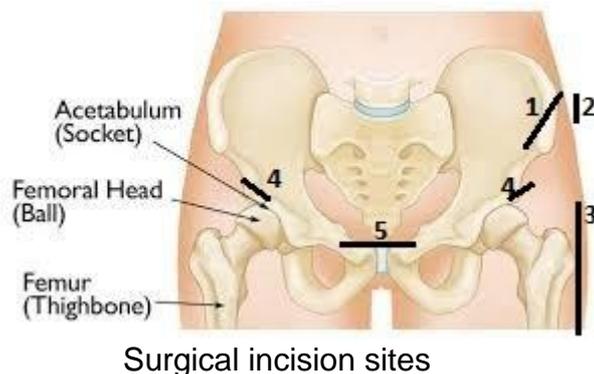
Most pelvic surgery is performed under general anaesthetic and the time it takes depends upon how complex the fracture is and how the fracture needs to be repaired. The anaesthetist will see you on the morning of your surgery and discuss the types of anaesthetic with you and the pain relief you will receive.

After your surgery you may go to the Emergency Care Unit (ECU) at ward 53 or the Intensive Treatment Unit (ITU) under the care of the orthopaedic trauma team.

Surgical Incision Sites

- 1 at the side of the Pelvis
- 2 either or both sides of the buttocks
- 3 at the side of the Hip
- 4 IN FIX incisions
- 5 at the front of the pelvis

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Immediately After Surgery

1. The nurses will be taking your blood pressure, pulse, respirations, temperature, oxygen saturations and checking your feet pulses and dressings regularly.
2. You may have an oxygen mask or two prongs that are plastic and go on your nose to administer oxygen.
3. You may have a patient-controlled analgesia pump (PCA) providing you can press the button. The anaesthetist will discuss post-operative analgesia with you when he/she comes to see you before the operation. You will also receive tablets regularly that work well with your PCA or other pain control method and you are encouraged to take them. Please let the nurses know when you are in pain as it is much easier to treat this earlier than when it becomes unbearable.
4. You will have a drip in your arm to ensure that you do not get dehydrated. This is discontinued once you are eating and drinking.
5. You may have a catheter in your urinary tract to avoid any potential difficulty or pain associated with using bedpans. The catheter will have been inserted immediately prior to the operation.
6. Whilst in bed take some deep breaths to clear your chest and reduce the risk of chest infections.
7. Regular foot and ankle exercises and calf-compression pumps will help the circulation and reduce the risk of blood clots forming.
8. When you are lying in bed for long periods it is important to change your position to reduce the risk of developing pressure sores.
9. You will often have two doses of antibiotics after your operation. These are given to you via the cannula that will have been inserted in your arm.

Special checks

During your stay the orthopaedic team will check the movement, nerve supply and sensation in your legs. They do this by checking your feet. You will be asked to wiggle

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your toes and particular attention will be paid to your big toe, ankle and the feeling (sensation) in your feet.

A Computed Tomography (CT) Scan of the pelvis will be often carried out when safe and as soon as you can tolerate. This is done to ensure optimum metalwork and bone placement.

Postoperative and Injury Complications

These are potential complications from general anaesthetic and surgery:

- **Pain**

We aim to ensure that you are as comfortable as possible and will review your pain scores and the effectiveness of your analgesia regularly. Please inform the nurses if you are in pain. Unfortunately, long term pain is relatively common after a pelvic injury.

- **Bleeding**

This can happen either during or after the operation. You may have a drain in your leg and your dressings will be checked regularly. You may require a blood transfusion.

- **Blood clots (deep vein thrombosis)**

These can form in the deep veins in your legs, or within your pelvis. The clots can move and go into the lungs (pulmonary embolism). To try to prevent this you will have calf compression device and injections in your abdomen every day. This will be continued on discharge for a total of 6 weeks.

- **Constipation**

This is very common from analgesia and general anaesthetic. To try to reduce this you will be given laxatives twice a day if required.

- **Incision site**

The incision site or wound may be closed with stitches under the skin that dissolve or with clips which are like staples. Clips are removed during your follow-up appointment roughly 14 days after your operation.

We do not change the dressings regularly unless they are very wet, as this increases wound healing times and the risk of possible infections. Leaking wound on the side of the hip can happen on rare occasions. Wound related concerns are taken seriously and needs to be reported to the trauma and orthopaedic team to avoid further complications.

- **Infection**

To try to prevent potential infections antibiotics are before your operation. These are normally given through the intravenous line in your arm to go straight into your blood stream.

Potential infection can be identified through:

- pain
- redness
- oozing from the wound

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- sometimes feeling generally unwell

- **Bladder injuries**

As the bladder sits in the pelvic cavity there is the potential risk of injury. This can cause either pain or difficulty in passing urine or the need to pass urine more frequently than before. Injury can be suspected if there is lots of blood in the urine. However, it is important to remember that this can also be signs of a urine infection, which can be very easily treated.

With these injuries it is normal practice to insert a catheter pre-operatively to reduce the pain associated with unstable fractures and bedpans.

The catheter will be removed a couple of days after the operation once you are more mobile. Before it is removed you will be given an injection of antibiotics to reduce the risk of infection.

- **Nerve Injuries**

The nerve most commonly affected by pelvic injuries is the sciatic nerve. This is a large nerve that exits the pelvis, passes down the back of the thigh and branches into the lower leg. Symptoms vary but can include numbness or pain in foot, calf or thigh, foot and ankle weakness or the inability to move the leg.

The sciatic nerve is not the only nerve that can be potentially damaged but it is the most common. These injuries can sometimes take months or years to recover or, if there is serious damage or the nerve is severed it may not recover at all.

It is common for other nerves supplying the outer skin of your thigh to be stretched and damaged. This may or may not recover. However, this does not cause weakness and is rarely a problem for patients

- **Sexual dysfunction/ problems**

In both men and women some nerve damage as a result of the injury can cause problems with sexual function and you may experience numbness.

In women this is around the perineum, which is the pelvic floor area and consists of a large group of muscles that pass from the pubic bone in the front of the pelvis to the coccyx (the tail bone)

In men numbness can occur on one side of the penis. There can also be problems getting erections.

These can be short-term problems but if you continue to have concerns tell the team and your pelvic surgeon for referral to the urology team who specialise in this area. Rest assured that the majority of patients go on to resume a normal sex life after treatment for a pelvic fracture.

- **Arthritis**

Arthritis is a potential long-term complication from pelvic and acetabular fractures, particularly those involving the sacroiliac joints at the back of your pelvis where it joins the spine. This is because at the time of the injury the surfaces of the joint are

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damaged and even if the pelvis is repaired perfectly the soft tissue and the joints remain damaged.

If the bone has been crushed and cannot be put completely back together, or if the bone has lost its blood supply and dies, arthritis can occur. However, even with severe injuries patients often do not get arthritis for many years and fixation remains the best treatment.

- **Post-traumatic stress**

This can occur after serious accidents.

If you start having nightmares, flashbacks, or seeing or hearing noises from the accident please let us know. We have a specialist team who can help you with this.

The First Few Days after the Operation

During this period, we will take some blood from you to check that you are not anaemic or dehydrated. Sometimes patients require a blood transfusion after the operation. We will also take your drip down. It is very important that you start eating and drinking and return to a normal healthy diet to promote bone healing:

- Protein: for repair and growth of tissues and cells. found in meat, poultry, fish, eggs, cheese, milk, yoghurts, beans and lentils
- Carbohydrates and fats for energy: found in breads, pasta, potatoes and rice
- Vitamins and minerals to help the body heal: found in all foods.

We will change your analgesia from the pump (PCA) to tablets. These are also morphine-based and you take them every 12 hours, backed up by a morphine-based liquid for you to take if pain breakthrough in between doses. You can normally have the liquid every two to four hours so please ask the nurses if you require this.

Once you have recovered from your operation the catheter will also be removed. You are given one dose of antibiotics as an injection to reduce the risk of possible infection on removal of the catheter.

Mobility after surgery

After your operation the team will tell you how much weight you can put through your legs. This depends upon the type of fracture you have sustained and even after it is fixed the bone still needs time to heal.

Patients are often unable to bear their weight either on both legs or on one leg for the first two to three months after the surgery.

The physiotherapists will teach you how to either transfer into a wheelchair or mobilise on crutches depending upon the consultant's recommendations. The physiotherapists will also give you exercises to do, which depend upon the type of surgery you have had.

On-going Recovery

Once you have recovered from your operation you will discuss discharge plans with the medical and nursing teams and the physiotherapists and occupational therapists (who will discuss your home situation and any aids or equipment you require on discharge).

You may require downstairs living for some time. To aid your discharge it is helpful to arrange to have a bed downstairs, a commode from the occupational therapists and a wheelchair from the Red Cross.

Depending upon your mobility and recovery, if UHCW is not your nearest hospital, you will be transferred to your local hospital, to continue your recovery. If you are able to manage you may be discharged straight to your home.

Whilst you are non-weight bearing and not able to move around easily you can hire a wheelchair from your local Red Cross to use once you are discharged from hospital. You can get your local Red Cross contact details from the internet as it depends upon where you live.

Discharge and Follow-ups

On discharge you will be given a discharge letter, your tablets and an outpatient's appointment.

Normally you will come back to University Hospital Coventry and Warwickshire to see the pelvic team at a specialist multidisciplinary clinic six weeks later. You will have an x-ray when you arrive to review your progress and then be seen by the pelvic team.

Rehabilitation

It is important to be aware that a pelvic fracture is often a severe injury and may take a significant period of rehabilitation to recover from. The time taken for you to return to your usual daily activities, including work, will depend on the extent of your pelvic fracture, the presence of other injuries, treatment and your occupation. Some patients may quickly return to work, may be as soon as six weeks, whereas others may take longer, maybe up to one year. Long-term limitations may be present in a small number of patients and are more likely to occur in those with more severe injuries.

Long-term Recovery

Driving

Depending on the severity of your injury, in general, you will not be able to drive for a minimum period of three months after your injury and possibly longer. You will be advised when it is safe for you to drive when you attend follow-up in our outpatient clinic. This is normally when you are fully mobile, comfortable and able to control your vehicle. It is your responsibility to inform the DVLA.

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Flying including going through airport scanners

It is advised that you do not fly until you are able to mobilise or walk without restriction as there is a risk of clots developing in the deep veins in your legs. This is generally for a period of at least three months after your injury.

It is possible that metal plates and screws may be detected by security scanners at airports. It is normally sufficient to advise the security team that you have had a metal implant placed in your pelvis after your injury. As metal implants are now common, security teams will normally have a straightforward way to assess this further and allow you through. You do not need documentation or an x-ray showing you have an implant in place.

Swimming

Swimming is best generally avoided until you have been advised it is safe for you to commence full weight bearing on the injured side. This could be for a period of three months depending upon the extent of your injury.

Sexual activity

The majority of patients go on to resume a normal sex life after treatment for a pelvic fracture. When you can resume sexual activity will be dependent on the extent of your injury and your recovery. It is generally best avoided until your wounds have healed and your pain is well controlled, the fracture has healed and you have commenced weight bearing. On re-commencing there is no restriction on positioning and mobility just as comfort allows.

Sexual intercourse may be painful for a small number of women and erectile dysfunction may be a problem for a small number of men. Should either of these develop, let the team or your GP know so that appropriate specialist help can be arranged.

Natural childbirth

Depending on the extent of your injury and the type of treatment you have had, a natural childbirth may or may not be possible. In many cases natural childbirth is possible. Ultimately, your obstetrician will be able to advise and guide you further, in consultation with the pelvic team as required.

It is important that you inform the obstetrician of your injury and ask him/her to contact us should he/she require information about your injury and treatment.

Removal of metalwork

On occasion the metalwork can be problematic; this can be removed once the bone has healed at approximately 12 months. It is common for metal at the front of the pelvis to break or come loose; however, this does not commonly pose a problem and can usually be left alone.

It is routine to remove an INFIX after about 3 months. Other pelvic metalwork can stay forever unless they cause problems.

Patient Information

Further Information

We hope you have found this information leaflet helpful. However, if you do have any questions or concerns about the information provided, please contact our team using the contact details below.

Contacting the Team

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