

INTERNATIONAL ATOMIC ENERGY AGENCY SAFRAD

PATIENT INFORMATION LEAFLET

You are about to undergo a fluoroscopically-guided procedure. This brochure provides you with information regarding the examination and why you might need a follow-up examination with an appropriate clinician for examination of areas of your skin that were exposed to x-rays during the procedure.

What are Angiography, Angioplasty and Vascular Stenting?

Angiography is a diagnostic procedure used to assess the vessels. Angioplasty and angioplasty with vascular stenting are minimally invasive interventional procedures performed to improve blood flow in the body's arteries.

Other types of procedures would be chemoembolization, biliary drainage, radiofrequency ablation, etc...

How should I prepare?

You should follow the recommendations given to you by the local staff members.

What does the equipment look like?

In these procedures, x-ray imaging equipment, a balloon catheter, sheath, stent and guide wire can be used.

The equipment typically used for this examination consists of a radiographic table, an x-ray tube and a television-like monitor that is located in the examining room or in a nearby room. Images in real time (called fluoroscopy) and still pictures are used

How is the angioplasty performed?

Image-guided, minimally invasive procedures such as angioplasty and vascular stenting should only be performed by a specially trained interventional radiologist or cardiologist in an interventional radiology suite or occasionally in the operating room. You will be positioned on the examining table.

You will be connected to monitors that track your heart rate, blood pressure and pulse during the procedure.

A nurse or technologist may insert an intravenous (IV) line into a vein in your hand or arm so that sedative medication can be given intravenously. You may also receive general anaesthesia.

The area of your body where the catheter is to be inserted will be shaved, sterilized and covered with a surgical drape.

Your physician will numb the area with a local anaesthetic.

A very small nick is made in the skin at the site.

A sheath is first inserted into the artery.

Guided by x-rays, the catheter is then inserted through the skin and manoeuvred through the artery until it reaches the site of the blockage. Once the catheter is in place, contrast material will be injected into the artery and an angiogram will be taken of the blocked artery to help identify the site of the blockage.

If necessary, a guide wire will then be moved to the site with x-ray guidance, followed by the balloon-tipped catheter. Once it reaches the blockage, the balloon will be inflated for a short period of time. The same site may be repeatedly treated or the balloon may be moved to other sites.

Additional x-rays will be taken to determine how much the blood flow has improved. When your physician is satisfied that the artery has been opened enough, the balloon catheter, the guide wire and catheter will be removed.

Many angioplasty procedures also include the placement of a stent, a small, flexible tube made of plastic or wire mesh to support the damaged artery walls.

If a sheath was inserted into your arm or wrist, it will be removed.

At the end of the procedure, the catheter will be removed and pressure will be applied to stop any bleeding. The opening in the skin is then covered with a dressing. No sutures are needed.

You may need to lie in bed with your legs straight for several hours.

Your intravenous line will be removed.

The length of the procedure varies depending on the time spent evaluating the vascular system prior to any therapy, as well as the complexity of the treatment, or complications that might occur during the procedure.

What will I experience during and after the procedure?

The local staff will explain all the procedure to you as well as what will happen after the procedure.

What are the benefits vs. risks?

Benefits

Compared to surgical interventions such as open surgery, balloon angioplasty, stent placement and other interventional radiology procedures are much less invasive and relatively low-risk, low-cost procedures.

These procedures are performed using local anaesthesia; no general anaesthetic is required in the majority of patients.

No surgical incision is needed—only a small nick in the skin that does not have to be stitched closed.

Most procedures are done on an out-patient basis.

You will be able to return to your normal activities shortly after the procedure.

Risks

Major complications following interventional procedures are uncommon. However, inserting the catheter can lead to injury of the artery.

When angioplasty is performed alone, blockages can recur, although most of these arteries can be opened again successfully. This can also occur when a stent is placed in the artery at the time of the angioplasty.

Heavy bleeding from the catheter insertion site may require special medication or a blood transfusion.

There is a risk of stroke when angioplasty and/or stenting are performed on the carotid artery.

A relatively rare complication associated with balloon angioplasty is abrupt vessel closure. This blockage in the area treated by the balloon angioplasty typically occurs

within 24 hours of the procedure. If it happens, treatment with medication into the artery to dissolve clots followed by angioplasty or stenting may be appropriate. In some cases, emergency bypass surgery may be needed.

Other rare complications include heart attack and sudden cardiac death.

There is a very slight risk of an allergic reaction if contrast material is injected.

Any procedure that involves placement of a catheter inside a blood vessel carries certain risks. These risks include damage to the blood vessel, bruising or bleeding at the puncture site, and infection.

Contrast material used during these procedures may cause a decrease in renal (kidney) function (renal failure), particularly if there is already some degree of decreased renal function. Your physician generally checks your renal function before this procedure in order to lower this risk.

Radiation risk

In very rare occasions, some patients can have a skin injury from radiation, causing reddening or damage to the skin. It is to monitor this risk that we want to follow you up, as part of the SAFRAD project. In the unlikely case that you have received substantial amounts of radiation, side-effects are possible and you or a member of your family will be asked to inspect your skin for signs of redness or rash 2 weeks after the procedure. You will be asked to inform the centre where the procedure was performed about the results of this inspection.

There is also a slightly elevated risk that the radiation necessary for your procedure might cause a cancer later in life. This risk is extremely small compared to the 1 in 5 chance that we all have to die of cancer.

Both risks depend on the amount of radiation received during the procedure and are not a major concern compared to the benefits. The likelihood of these occurring depends on the difficulty of the procedure and whether you are sensitive to radiation due to previous procedures, disease or genetic condition

X-ray safety :

- As with other medical procedures, x-rays are safe when used with care. Radiologists and x-ray technologists have been trained to use the minimum amount of radiation necessary to obtain the needed results. Properly conducted imaging carries minimal risks and should be performed when clinically indicated. The amount of radiation used in most examinations is very small and the benefits greatly outweigh the risk of harm.
- X-rays are produced only when a switch is momentarily turned on. As with visible light, no radiation remains after the switch is turned off

X-rays over your lifetime :

- The decision to have an x-ray exam is a medical one, based on the likelihood of benefit from the exam and the potential risk from radiation. For low dose examinations, usually those that involve only films taken by a technologist, this is generally an easy decision. For higher dose exams such as computed tomography (CT) scans and those involving the use of contrast materials (dyes) such as barium or iodine, the radiologist may want to consider your past history of exposure to x-rays. If you have had frequent x-ray exams and change healthcare providers, it is a good idea to keep a record of your x-ray history for yourself. This can help your doctor make an informed decision. It is also very important to tell your doctor if you are pregnant before having an exam that involves the abdomen or pelvic region.

Pregnancy and x-rays :

- Sometimes patients need examinations of the abdomen or pelvis while they are pregnant. When studies of the abdomen or pelvis are required, the physician may prefer to order a different type of exam for a pregnant patient or reduce the number of x-rays from that which is normally acquired. Therefore, it is important that you inform your physician or the x-ray technologist about your reproductive status before the x-ray study is performed.

Minimizing radiation exposure is necessary :

- Special care is taken during x-ray examinations to use the lowest radiation dose possible while producing the best images for evaluation. National and international radiology protection organizations continually review and update the technique standards used by radiology professionals.
- Modern x-ray systems have very controlled x-ray beams and dose control methods to minimize stray (scatter) radiation. This ensures that those parts of a patient's body not being imaged receive minimal radiation exposure.
- When performing angiography in children or young adults, care is often taken to minimize radiation to the ovaries and testes by placing a lead drape under the pelvis.

FOR ANY QUESTIONS OR CONCERNS,

PLEASE CALL: to be filled locally