

Fistulagram/Fistulaplasty

About this procedure

Kidneys filter blood to balance fluid and electrolytes, and to remove waste products from the blood. For people with chronic renal (kidney) failure, the process of hemodialysis filters the blood for them.

For hemodialysis, a fistula is created by joining an artery and vein together. A well functioning fistula has a bruit (a pulse that you can hear), a thrill (a pulse that can be felt), and good blood flow. Over time, a fistula can age and develop problems such as scarring or clots, which can decrease the function of the fistula and the effectiveness of dialysis.

One of the ways to improve function and blood flow through the fistula is to have a fistulagram or, if needed, a fistulaplasty.

Fistulagram

A fistulagram is a study of a fistula. During a fistulagram, a patient lies on an exam table. The fistula is cleaned and then an injection is given to numb the area. A needle is then placed in the fistula and a wire is put inside the needle. The wire is left in the fistula and the needle is removed, allowing a catheter to be placed over the wire and into the fistula.

Contrast dye is injected through the catheter while X-rays are taken in rapid sequence. This allows the doctors to see how the vein and artery in the fistula are shaped. If nothing is wrong, the catheter is removed and the patient can go home.

Fistulaplasty

If there is a narrowed area, the catheter is exchanged for a special catheter that has a flat balloon on the tip. The balloon area is advanced to the area of narrowing and then the balloon is blown up with sterile water. This balloon inside the fistula expands and therefore expands the area of narrowing in the vein or the artery. This expansion of the vessel with the balloon is called a fistulaplasty.

After the fistulaplasty, another fistulagram is done to see what has happened to the narrowing. In most cases, the narrowing must be expanded several times. On rare occasions, a stent (a small metal-mesh tube) needs to be placed to hold the area of narrowing open.

How does it work?

The nurse will stay with you during the procedure to watch your blood pressure, heart rate, breathing rate, and comfort level.

A radiology technologist will clean your skin with a special soap and may shave some hair in the areas that the doctor will be working on.

X-rays are taken while the contrast moves through your blood vessel. The X-rays show where an artery or vein might be blocked, narrowed, leaking, or enlarged.

If any area of concern is noted, a fistulaplasty will be done.

After the procedure, the catheter is removed and a pressure bandage will be placed over the puncture site. This step

takes about 10 to 15 minutes depending on how long it takes your blood to clot. The pressure bandage will prevent you from bleeding during this time.

What can I expect?

- Check in at the front desk in Imaging Services.
- You will then change into a hospital gown.
- You will be given a bag for your belongings. A restroom is available.
- You will be taken to a special area where a nurse will see you and ask you questions about your health history.
- An IV (intravenous line) will be started to give you fluid and medicine during the procedure.
- The radiology doctor will see you in this area to discuss the procedure and obtain your consent.
- You will be able to ask any questions you have at this time.

What are the possible risks of a fistulagram or fistulaplasty?

You may have:

- An allergic reaction to the contrast, which may cause hives, a drop in blood pressure, or swelling of the skin.
- Minor discomfort if the local anesthetic does not completely numb the area and/or an allergic reaction to the drug used in the local anesthetic.
- An injury to the fistula from placement of the catheter, causing bleeding or a blockage of blood flow to the fistula.
- Surgery to correct damage caused by the procedure.
- An infection from the puncture site.

Contrast reactions

- [Contrast Extravasation](#)
- [Contrast Reaction](#)
- [Delayed Reaction to IV Contrast](#)
- [Contrast Injections](#)

What should I expect after my procedure?

- You will be watched closely for a short time in the Imaging Services department.
- Most patients then go to a short-stay unit within the hospital, unless your referring doctor has made other plans.
- You should be able to eat, drink, and take your normal medicines.
- Your family member or driver may go with you to this area.
- Before you leave, a nurse will give you a written plan to follow when you are home.

When to be concerned after the procedure?

Call your doctor if:

- Your hand is more cold or numb than usual.
- You are bleeding at the site and it will not stop with direct pressure.
- You have a change in the bruit and/or thrill in your fistula.
- You have swelling, see redness, or feel heat at or near the puncture site.

Your Results

Results are seen during dialysis. On the day of the procedure we can observe better flow, but the real test comes with a good run on dialysis.