Fistulogram/Sinogram



A fistulogram is a medical test that uses fluoroscopy and contrast material to produce images of an abnormal passage within the body called a fistula. Similarly, a sinogram assesses an abnormal passage called a sinus that originates or ends in one opening, often on the skin. Both examinations are used to assess and diagnose the size and shape of fistulas and sinuses and any related abscess and/or infection.

You will be instructed on how to prepare. You may be asked to refrain from eating or drinking anything for several hours before the examination, but you should be allowed to take medications with small amounts of clear fluid. Tell your doctor if there's a possibility you are pregnant and discuss any recent illnesses, medical conditions, and allergies, especially to contrast materials. Leave jewelry at home and wear loose, comfortable clothing. You may be asked to wear a gown.

What is a Fistulogram/Sinogram?

A fistulogram is an x-ray procedure used to view a fistula (http://www.radiologyinfo.org) , an abnormal passage between two or more parts of your body that often drains out of your skin. A sinogram is a similar procedure done to assess a sinus, an abnormal passage or cavity that originates or ends in one opening, often on the skin. Contrast material (https://www.radiologyinfo.org/en/info/safety-contrast) is used to help fill the track and determine what parts of your body are involved.

What are some common uses of the procedure?

A fistulogram/sinogram is used to diagnose and assess the size and shape of fistulas and sinuses and prepare a treatment plan.

Fistulas usually involve hollow organs like the bowel and anus, urinary bladder, and vagina (http://www.radiologyinfo.org) . They often form as a result of infection or inflammation related to surgery, injury or radiation therapy (http://www.radiologyinfo.org) . They may also be related to inflammatory bowel conditions such as Crohn's disease (https://www.radiologyinfo.org/en/info/crohns-disease) and ulcerative colitis (http://www.radiologyinfo.org) .

Fistulograms are used to assess many types of fistulas, including those that form between:

- two loops of intestine
- the anal canal and skin near the anus (http://www.radiologyinfo.org)
- the vagina and another body part such as the colon, rectum (http://www.radiologyinfo.org) , small intestine (http://www.radiologyinfo.org) or bladder.

Fistulograms may also be used to assess abscess collections after drainage and to determine whether there is a communication from the collection to any surrounding structures.

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Sinuses can occur throughout the body and may be related to infection or injury. Symptoms may be mild, such as a discharge of clear fluid from the skin, or more serious, such as abscess (http://www.radiologyinfo.org) formation. A sinogram can show the extent of the problem and help develop a plan for future care.

How should I prepare?

Tell your doctor about all the medications you take. List any allergies, especially to iodine contrast materials (http://www.radiologyinfo.org) . Tell your doctor about recent illnesses or other medical conditions.

Women should always tell their doctor and technologist (http://www.radiologyinfo.org) if they are pregnant. Doctors will not perform many tests during pregnancy to avoid exposing the fetus (http://www.radiologyinfo.org) to radiation. If an x-ray is necessary, the doctor will take precautions to minimize radiation exposure to the baby. *See the Radiation Safety (https://www.radiologyinfo.org/en/info/safety-radiation) page for more information about pregnancy and x-rays.*

Instructions are typically provided prior to your exam. You may be asked to refrain from eating solid foods before the procedure but you may usually drink small amounts of clear fluid with medications. Please ask your radiology provider if you have any questions.

What does the equipment look like?

This exam typically uses a radiographic table, one or two x-ray tubes, and a video monitor. Fluoroscopy converts x-rays into video images. Doctors use it to watch and guide procedures. The x-ray machine and a detector suspended over the exam table produce the video.

The radiologist typically will introduce contrast material into the fistula/sinus with a thin plastic tube called a catheter (http://www.radiologyinfo.org) .

How does the procedure work?

X-rays are a form of radiation like light or radio waves. X-rays pass through most objects, including the body. The technologist carefully aims the x-ray beam at the area of interest. The machine produces a small burst of radiation that passes through your body. The radiation records an image on photographic film or a special detector.

Different parts of the body absorb the x-rays in varying degrees. Dense bone absorbs much of the radiation while soft tissue (muscle, fat, and organs) allow more of the x-rays to pass through them. As a result, bones appear white on the x-ray, soft tissue shows up in shades of gray, and air appears black.

Most x-ray images are electronically stored digital files. Your doctor can easily access these stored images to diagnose and manage your condition.

Fluoroscopy uses a continuous or pulsed x-ray beam to create images and project them onto a video monitor. Your exam may use a contrast material to clearly define the area of interest. Fluoroscopy allows your doctor to view joints or internal organs in motion. The exam also captures still images or movies and stores them electronically on a computer.

How is the procedure performed?

You may be asked to change into a hospital gown. You also may receive an intravenous (IV) (http://www.radiologyinfo.org) line in your arm for the delivery of painkillers and/or sedatives to help make you more comfortable during the procedure.

You will be taken into the x-ray room where the technologist will position you on the x-ray table. The x-ray machine will be positioned so that the radiologist can easily view the contrast material-enhanced fistula/sinus.

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The area around the fistula/sinus will be cleaned with an antiseptic solution. Occasionally, a local anesthetic (http://www.radiologyinfo.org) is injected into the area.

The radiologist will use the x-ray equipment to guide the catheter into the fistula/sinus track or ultrasound to help guide a needle into the dialysis artery/vein . When the catheter is in the correct place, the radiologist will inject contrast material through the catheter. X-ray will be used to show where the contrast goes.

You must hold very still and may need to hold your breath for a few seconds while the technologist (http://www.radiologyinfo.org) takes the x-ray. This helps reduce the possibility of a blurred image. The technologist will walk behind a wall or into the next room to activate the x-ray machine.

When all the x-rays have been taken, the catheter will be removed. If your fistula/sinus has an opening on the outside of the body, the doctor or nurse will clean your wound site and cover your skin with a dressing. If your fistula/sinus is inside your rectum or vagina, you will be able to use the bathroom to pass any remaining contrast.

Depending on departmental policy, some hospitals will allow a guardian to accompany the child into the x-ray room. The guardian will be asked to wear a lead apron to protect certain parts of his or her body. A lead shield may also be used to protect their child's reproductive organs as much as possible from radiation exposure if considered useful and necessary by the radiologist. Both the radiologist and the technologist involved in the procedure will try to minimize the radiation you receive during the test.
See the Children and Radiation Safety page (https://www.radiologyinfo.org/en/info/safety-rad-children) for more information.

What will I experience during and after the procedure?

You may experience slight discomfort when the IV line is placed in your arm or when local anesthetic is injected in the area of your fistula/sinus. You may feel a warm sensation as the contrast material is injected into your fistula/sinus. While you may experience discomfort during the procedure, there is usually no pain.

The procedure itself will take approximately 30 minutes, and you should expect to spend about an hour in the x-ray department. You may be asked to stay in the facility for one to two hours to recover. During this time, your nurse will check your fistula or sinus area for any bleeding.

There may be some restrictions on your activities for 24 hours after your procedure. For instance, you may be advised to avoid: driving or using any heavy machines; drinking alcohol or taking any medicines that make you drowsy; lifting anything heavy; or wearing tight clothes or jewelry that will press on your wound.

Usually, you can return to your normal activities 24 hours after your procedure.

Who interprets the results and how do I get them?

A radiologist (https://www.radiologyinfo.org/en/info/article-your-radiologist) , a doctor trained to supervise and interpret radiology examinations, will analyze the images. The radiologist will send a signed report to your primary care or referring physician (http://www.radiologyinfo.org) who will discuss the results (https://www.radiologyinfo.org/en/info/all-about-your-radiology-report) with you.

What are the benefits vs. risks?

Benefits

- Radiologic examinations can often provide enough information to avoid more invasive procedures.
- A fistulogram/sinogram can give your doctors precise and key information to help develop the best treatment plan for you.

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- Fistulograms/sinograms provide real-time images for immediate evaluation.
- No radiation stays in your body after an x-ray exam.
- X-rays usually have no side effects in the typical diagnostic range for this exam.

Risks

- There is always a slight chance of cancer from excessive exposure to radiation. However, given the small amount of radiation used in medical imaging, the benefit of an accurate diagnosis far outweighs the associated risk.
- Women should always tell their doctor and x-ray technologist if they are pregnant. *See the Radiation Safety (https://www.radiologyinfo.org/en/info/safety-radiation) page for more information about pregnancy and x-rays.*
- Fistulograms and sinograms are safe medical exams with a very low rate of complications for the patient.
- Rarely, you may experience an allergic reaction to the contrast material. This could result in a rash, hives, itching, nausea, fainting or shortness of breath. Medication may be given to relieve this. Contact your doctor if you have any of these symptoms.
- There may be a small amount of bleeding from the fistula/sinus for a short time after the procedure.

What are the limitations of Fistulogram/Sinogram exams?

Fistulograms/sinograms may not be possible in every patient due to medical and/or technical reasons.

The procedure may fail to define the presence of disease upstream or downstream from the fistula, which may be necessary for appropriate treatment planning.

The procedure may fail to provide the anatomic location of the fistula within the gastrointestinal tract (http://www.radiologyinfo.org) . Edema (http://www.radiologyinfo.org) , debris, or a large abscess may hinder fistulograms by blocking the flow of contrast material. Fistulograms are not recommended if sepsis is present—a potentially life-threatening response to infection.

Often, information concerning potential fistulas or sinuses and their communications can be obtained from CT or MR scans performed after ingestion of oral contrast. Contrast-enhanced CT or MR may be able to identify connections from the bowel to any surrounding structures or skin.

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