

Hysterosalpingogram s (hsg): patient preparation and protocols



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Abstract

Infertility is defined as when after a year of trying without the use of birth control, a couple is unable to become pregnant. After this, there are other options such as receiving a hysterosalpingogram. This type of procedure can tell if there is a blockage, or other pathologic conditions to any of the female reproductive anatomy, that could cause an infertility issue. This radiologic procedure involves the careful injection of a contrast media to display the anatomy for the radiologist and physician to see. There is certain prep, equipment, and protocols used that will be discussed in this paper. Potential patients should also note that there are risk factors associated with this exam.

Hysterosalpingograms (HSG): Patient Preparation and Protocols

Hysterosalpingograms (HSG) are a fluoroscopic and radiologic study of the uterus and fallopian tubes. A contrast agent is injected by the use of a catheter to better visualize these parts. A female may undergo this type of procedure for infertility, intrauterine pathology, and more. There are however, certain contraindications that may prevent a patient from receiving a hysterosalpingogram. Overall, hysterosalpingograms are a well-developed method of radiology to better diagnose patients reproductive and anatomical conditions.

Patient Preparation

There are preparations that a patients must take in order to receive this exam. Some locations may have different preparation instructions. These are just general protocols that may be followed. To rule out any other complications, a pelvic exam by an individual's physician may be required. Bowels must be emptied prior to the procedure so that feces or gas does not obscure the radiographic image, a laxative may be proscribed. Cramping may occur during the procedure so it is suggested to take a pain reliever before the exam. Right before the procedure, a patient must empty her bladder so that the uterine tubes and uterus are in the natural shape and location. The procedure and possible complications are always explained to the patient and informed consent must be obtained (Lampignano & Kendrick (2018).

Indications and Contraindications

Indications that a female may have to get a hysterosalpingogram range from infertility to general anatomical issues. If a study is done for infertility reasons, the study can find any functional or structural defects of the uterus or fallopian tubes such as a blockage in the tubes. For intrauterine pathologic conditions HSG is used, but ultrasound is more common. If looking for pathologic conditions, symptoms experienced by patients may include pelvic pain, abnormal uterine bleeding, and “ pelvic fullness”. Some of the indicating pathology may include lesions such as endometrial polyps, intrauterine adhesions, and even uterine fibroids (Lampignano & Kendrick, 2018). According to UCLA Obstetrics and Gynecology, fibroids are tumors in the muscle wall of the uterus or in the tissue surrounding the uterus (n. d.).

Other pathology that may be demonstrated on a HSG are fistulas, pelvic masses, congenital defects and habitual spontaneous abortions. One last indication may occur if a female has just received tubal ligation or reconstructive surgery. ((Lampignano & Kendrick, 2018). Tubal ligation is a surgical procedure to close the fallopian tubes and prevent a women from getting pregnant (Jacobson, 2018b).

Some reasons may contradict a patient from receiving an HSG. If a women is pregnant or there is a chance of pregnancy. (Lampignano & Kendrick, 2018). An HSG is preferred to be done in the first half of a women's menstrual cycle, this decreases the chance of pregnancy (American College of Obstetricians and Gynecologists [ACOG], 2011). If a female is subject to pelvic inflammatory disease or active uterine bleeding, these may also contradict a HSG procedure (Lampignano & Kendrick, 2018).

Anatomy

It is important to understand the make-up of the anatomic parts indicated in an HSG before reviewing the procedure components itself. Like stated earlier, an HSG looks at the anatomy of the female reproductive system; the uterus, fallopian tubes, vagina and the ovaries. The uterus is a muscular organ that is typically shaped like a pear and is hollow. It has four defining parts. The fundus of the uterus is most superior and rounded. The corpus which is the body of the uterus, is triangle shaped. The isthmus is a portion below the body (corpus), it narrows down toward the cervix. Lastly, the most inferior portion of the uterus is the cervix or neck. At the very end of the cervix it is called the external os, this is where it connects to the vagina (below). The uterus has three layers starting with the inner layer

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(endometrium) which sheds during a women's menstrual period. Next is the middle and thickest layer (myometrium) which consists of smooth muscle. Lastly the outer layer is serosa, this is lined with peritoneum and creates a "capsule around the uterus" (Lampignano & Kendrick, 2018).

The uterus shape and size varies among women. This takes into account a female's age and if they have delivered children. On either side of the uterus there are fallopian tubes which extend out laterally. They connect to the uterus via an aspect called the cornu of the uterus. The fallopian tubes length is around 10-12 cm and have a diameter of 1-4mm (Lampignano & Kendrick, 2018). This is comparable to the length of the fifth digit and metacarpal together, and the diameter of a phone charger cord or thinner.

A female generally has two fallopian tubes. The fallopian tubes are also termed uterine tubes. Like the uterus, the fallopian tubes have four defining parts. The interstitial portion of the fallopian tube is where it "communicates with the uterine cavity. The fallopian tubes also have an isthmus portion like the uterus. The isthmus portion is a narrowing portion that widens as it connects to the next portion, the ampulla. The ampulla is a section of the fallopian tube that curves around the ovary below. The last portion is the infundibulum, at the end are "finger like" projections called fimbriae which attach the fallopian tubes to the ovaries. The ovary is a small oval structure that contains the eggs in the female reproductive system. They connect to the uterus by the ovarian ligament for support (Lampignano & Kendrick, 2018).

Procedure

A HSG can happen at a hospital, physician's office or even a clinic (ACOG, 2011). In the room is a physician, a radiologic technologist and potentially a radiologist or radiologist assistant (RA). The physician does all of the inserting, and the RA or radiologist assists them by handling equipment from the sterile tray and doing the imaging. From experience, the role of the radiologic technologist is to make the patient comfortable and help when needed.

The procedure starts with the patient in the lithotomy position. This is when the patient is supine at the end of the table with their legs flexed and abducted slightly. Next the patient is draped with sterile towels. A "vaginal speculum" is inserted and the walls of the vagina are cleaned with antiseptic. A balloon catheter is inserted and inflated, this prevents contrast to flow backwards and exit the cavity when injected. A tenaculum may be used as an aid during insertion. Next a syringe is attached to the catheter. The contrast is then slowly injected into the uterine cavity while the patient is in a slight trendelenburg position. This allows the contrast to flow into the cavity and fill the fallopian tubes if they are open (Lampignano & Kendrick, 2018).

The use of fluoroscopy imaging is used during the procedure. Sometimes a scout radiograph can be taken of the pelvis after the catheter is inserted, but before contrast is injected to assure correct positioning. Then fluoroscopy images are "intermittently obtained" throughout the contrast injection process. Fluoro. imaging is used while the uterus is actively filled with contrast and when it is completely full. When the uterus is "distended" with <https://assignbuster.com/hysterosalpingograms-hsg-patient-preparation-and-protocols/>

contrast, this is when the shape is best visualized. Next another image is taken of the uterine tubes filling with contrast. Lastly imaging is obtained while contrast escapes the fallopian tubes and goes into the pelvic cavity. Some exams may not get this far if there is a blockage in the tubes. Oblique views of the uterus and fallopian tubes may be taken to elongate these structures (Simpson, Beitia, & Mester, 2006).

After the procedure a patient might have some contrast continue to come out of the uterus. There also may be bleeding post procedure. Cramps, dizziness and a sick to the stomach feeling are also normal (ACOG, 2011).

Contrast Used and Risks Involved

There are two types of contrast media that could be used. One is an iodinated contrast media, another is a water soluble iodinated contrast. The water soluble is preferred because this type is absorbed easily and does not leave a residue on the anatomy, helping to better visualize. This type does cause pain when injected into the uterus and can persist after the procedure. The amount of contrast used is physician dependent (Lampignano & Kendrick, 2018).

When using contrast there is always a chance of an allergic reaction. There are mild to moderate and severe reactions to the procedure in general. The two primary reactions are bleeding and infections from an HSG. Bleeding can be caused by irritation to the catheter, especially the balloon tip against the wall of the uterus. Infection rates are decreased because of the use of sterile instruments. For a few days after the procedure, women are told to watch for fever or abnormal discharge from the vagina. Some moderate to severe

reactions relate to pain and the event of an allergic reaction. Serious pain may occur and procedures are sometimes ended early due to patient discomfort. A systemic reaction from the contrast is possible but highly unlikely. There is also a risk of irradiating a woman that is in the early stages of pregnancy and is unsuspected. But this chance is reduced by timing the exam specific to the patient's menstrual cycle (Simpson et al., 2006). Other risks include perforation of the uterus, endometritis which is an inflammation of the lining of the uterus, and salpingitis, an infection of the fallopian tubes (Jacobson, 2018a).

Equipment used

For hysterosalpingograms, basic equipment is used. A fluoroscopy machine is used with a fluoroscopy table, it is important that the table is able to tilt and move to meet the needs of the exam. A sterile HSG tray is used which contains instruments such as the vaginal speculum and catheter need for the procedure. Antiseptic and other cleaning supplies are located in the HSG tray for preparation of the exam. Like previously stated a tenaculum are sometimes used by the physician. This is a clamp with a hook used to hold tissues and structures in place. This can be helpful in the contrast injection process (Lampignano & Kendrick, 2018).

In conclusion, the hysterosalpingogram is a well-developed procedure that can aid the process of infertility. It is important for staff to be well educated on the anatomy and what to look for during fluoroscopy. This can be a stressful time for the patient so comforting may be needed during the exam. Educating the patient before and during the procedure can help relieve some of those stressors.

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