

Radiography Hystero Salpingography (HSG) With the Allegation of Nonpatency of Both Fallopii Tubes at Columbia Asia Hospital Medan

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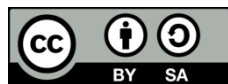
ABSTRACT

Hystero Salpingography (HSG) radiography with suspected non-patency of both fallopian tubes at the Radiology Installation of Columbia Asia Hospital, Medan. Scientific Writing for the Diploma III Radiodiagnostic Engineering and Radiotherapy Study Program Sinar Amal Bhakti Foundation Medan 2021. Hystero Salpingography (HSG) is an examination of the uterus and salpinx using radio opaque contrast media via a uterine canule carried out by a radiologist with the patient supine on the flouroscopy table, examination This can also be done with conventional radiography using a tube from above. Non-patent tubes are tubes that are occluded so that sperm cannot reach the ampulla to fertilize the ovum. The aim of the examination is to show the anatomy and abnormalities accurately by means of contrast injection using a catheter. This research was conducted at the Radiology Installation at Columbia Asia Hospital, Medan. The examination technique uses an antero-posterior projection which aims to optimally show the anatomical structure of the uterus and fallopian tubes. The aircraft used in this research is a Philips Pesawar General X-ray Unit with the Bucky Diagnost CS.Optimus 80 type and a capacity of 500 mA. The cassette used measures 18x24 cm. The film processing process used is Computed Radiography (CR).

Keywords:

Hystero Salpingography (HSG), Non-patency of both fallopian tubes, Computed Radiography (CR).

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1. INTRODUCTION

Hystero Salpingography (HSG) is an examination of the uterus and salpinx using radio opaque contrast media via a uterine canule [1]. Primary infertility is the inability or decreased ability of a woman to produce offspring who has been married for more than a year caused by non-patent tubes [2]. Non-potent tubes are tubes that are occluded so that sperm cannot reach the ampulla to fertilize the ovum [3].

Hystero Salpingography (HSG) with suspicion of being non-competent is an examination carried out by radiologists and radiographers by inserting positive contrast media into the uterine tube (salpinx) to see whether or not there is a blockage in the salpinx canal and can also be used as therapy [4]. Uterine tube (salpinx) is a tube through which the ovum passes from the ovary to the uterine cavity, and as a place for spermatozoa to pass from the opposite direction and where the fertilization process occurs [5].

Based on the background above, the author would like to examine in more depth the scientific paper entitled "Hystero Salpingography (HSG) Radiography with Non-Patency of Both Fallopian Tubes at Columbia Asia Hospital Medan". Antero-Posterior [6]. The aircraft used is General x-ray. Based on the background above, the author limits the problem as follows: Hystero Salpingography (HSG) radiography with suspected non-patency of both fallopian tubes [7]. By projecting an X-Ray Unit with a capacity of 500 mA, as well as the recording of Computed Radiography type image layout (CR). The author here compares the introduction of contrast media using a catheter or HSG set [8].

Based on the background and limitations of the problem above, in writing this scientific paper, the author discusses the radiographic examination of Hystero Salpingography (HSG) with the suspicion of non-patency of both Fallopian Tubes, so the author formulates the problem, namely [9]: "What efforts are made to obtain a radiographic
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image of Hystero Salpingography (HSG) with the suspicion of optimal non-patency of both Fallopian Tubes using a catheter or HSG set?" [10].

Antero-Posterior. The aircraft used is General x-ray. Based on the background above, the author limits the problem as follows: Hystero Salpingography (HSG) radiography with suspected non-patency of both fallopian tubes. By projecting an X-Ray Unit with a capacity of 500 mA, as well as recording Computed Radiography (CR) type images. The author here compares the introduction of contrast media using a catheter or HSG set [11].

Based on the background and limitations of the problem above, in writing this scientific paper, the author discusses the radiographic examination of Hystero Salpingography (HSG) with the suspicion of non-patency of both Fallopian Tubes, so the author formulates the problem [12], namely: "What efforts are made to obtain a radiographic image of Hystero Salpingography (HSG)) with the suspicion of optimal non-patency of both Fallopian Tubes using a catheter or HSG set?"

2. METHODS

Types of research

In writing a scientific paper entitled Hystero Salpingography (HSG) with suspected primary infertility, descriptive qualitative research was used. The descriptive qualitative research method is that the research and analysis are described in scientific writing in the form of a narrative and then a conclusion is drawn from the results of the analysis carried out [13].

Qualitative research techniques are research that is descriptive in nature and tends to use analysis and emphasizes the subject's perspective. In this research, the theoretical basis is used as a guide so that the research focus is in accordance with the facts in the field and the theoretical basis is also useful for providing a general overview of the writing setting and as material for discussing research results [14].

Descriptive research is a search for facts with appropriate interpretation [15]. Descriptive research studies problems in society, as well as procedures in society and certain situations, including the relationship between activities, attitudes, views, as well as ongoing processes and the influence of a phenomenon [16]. Descriptive research is a research method that attempts to describe the object or subject being studied according to what it is.

Time and Place of Research

Research time: May 2021. Research location: Radiology Installation at Columbia Asia Hospital, Medan, Jl. Electric No. 2A, Petisah, Medan City, North Sumatra.

Data Collection Techniques

To obtain data correctly and accurately in compiling this scientific paper, the author used several methods, namely: 1. Observation of learning, By studying the study materials while attending lectures at ATRO Sinar Amal Bhakti Medan and practical experience at the Radiology Installation at Royal Prima Hospital Medan, Radiology Installation at Putri Hijau Hospital Medan, Radiology Installation at Columbia Asia Hospital Medan and Radiology Installation at North Sumatra University Hospital Medan [17]. 2. Interview, This method was used by the author to obtain data related to examinations carried out by both patients, radiographers and radiologists. 3. Observation, Carrying out observations, namely by direct observation of the object (observation), this method is carried out by the author to obtain data, namely direct observation in the radiology department so as to obtain diagnostic results that are in accordance with the written work. 4. Study online, By browsing, looking for material from sites related to the author's writing [18].

Analysis of Results

From the results of the Hystero Salpingography (HSG) examination with suspected non-patency of both fallopian tubes carried out at Columbia Asia Medab Hospital, an optimal and appropriate picture was obtained to confirm the diagnosis [19]. In selecting equipment, patient preparation and examination procedures carried out on patients are also carried out appropriately in accordance with the patient's general condition. However, sometimes there are also results that are not optimal in establishing a diagnosis from the resulting image, so a more in-depth examination of the Hystero Salpingography examination is needed (HSG) with suspected non-patency of both fallopian tubes. The author presents the results that have been collected in narrative form and then draws conclusions [20].

3. RESULTS AND DISCUSSION

Results

As a result of the evaluation, the author reports the results of the Hystero Salpingography (HSG) Radiographic Examination with the suspicion of non-patency of both fallopian tubes at Columbia Asia Hospital, Medan. With patient data as follows:

1. Patient Identification

HSG examination using a catheter:

The author carried out an examination at Columbia Asia Hospital, Medan, with the following data:

Name: Mrs. V Age: 34 years

Gender: Female Examination: Hystero Salpingography (HSG)

Clinical: Primary Infertility Sending doctor: Dr. Muldjadi Affendy, M.Ked(Og) Sp.Og(K) Reading doctor: Dr. Buter Samin, Sp.Rad

2. Inspection Procedures

1. The patient comes to register at the first registration point at Columbia Asia Hospital, Medan
2. The patient is examined by an ob-gyn specialist regarding the patient's complaint
3. The ob-gyn specialist then sends a photo request letter to the radiology department
4. The patient comes to radiology with the request letter and then gives it to the radiology officer
5. The radiology officer reads the form, then directs patient to follow the examination procedures.
6. The patient signs informed consent after the radiographer explains the examination procedure [21].

3. Patient Preparation

Patient preparation for HSG examination is as follows:

1. The patient is not permitted to engage in coitus (sexual intercourse
2. for 2x24 hours or for 2 days) before the examination. This is because it is suspected that fertilization will occur after coitus. It is certainly not permissible to carry out an HSG examination because it will harm the fetus.
3. During the examination, the rectum should be empty, this can be done by giving the patient a dulcolas suppository table several hours before the examination.
4. To reduce tension and pain, on the doctor's orders the sufferer can be given sedatives and anti-spasmodics.
5. Before the examination, the patient must urinate
6. Small size first to prevent the patient from urinating during the examination so that the examination is not disturbed and can run smoothly.
7. Give the patient an explanation of the purpose and objectives of the examination, as well as the course of the examination so that the patient feels safe and calm so that they can be invited to cooperate for the smooth running of the examination.

4. Preparation of inspection tools



Figure 1. Philips X-ray aircraft at (Columbia Asia Medan Hospital)



Figure 2. Philips Control Table at (Columbia Asia Hospital Medan)

- 1) General Xray aircraft and examination table Brand of examination table: Philips Type/model of table: Bucky Diagnost CS. Optimus 80 Inspection table serial number: 11000016 Year of manufacture: 2010 Year of installation: 2011 Tube brand: Philips Tube type: 98900008571 Tube serial no: 231813 Voltage difference: 100 kVp Current (mA): 500 Ma mAs (time current): 16 Sec
- 2) CR cassette measuring 18x24cm
- 3) 8mm catheter or HSG-SET
- 4) Positive contrast media type iopamidhol
- 5) Gels
- 6) 3cc syringe + 10cc syringe
- 7) Sterile gauze
- 8) Nierbekken 9) Handschoen
- 10) NaCl liquid
- 11) Betadine



Figure 3. HSG Examination Equipment and Materials (Columbia Asia Hospital Medan)

5. Inspection Technique

a. Insertion of contrast media

Insertion of contrast media is usually done in 2 ways, namely with an HSG set and with a catheter. The contrast media used is positive contrast media, the type of water soluble iodine that is often used, namely Omnipaque 6 cc and Iopamiro.

1. Insertion of contrast media using an HSG set

- a. After the patient is placed in the lithotomy position, the vaginal area is cleaned using disinfectant, antiseptic medication is also given to the cervical area.
- b. A speculum is used to open the vagina and make it easier for the HSG set to enter, then the inside of the vagina is cleaned with betadine, then a uterine probe is inserted to measure and direction of the uterus.
- c. Prepare the HSG set that has been filled with contrast media. Before inserting it, first spray the contrast media until it comes out of the tip of the HSG set.

- d. With the help of long forceps, the HSG set is slowly inserted into the external uterine ostium.
- e. The patient is positioned in the middle of the examination table and begins to inject 6ml or more of contrast media.
- f. Contrast media will fill the uterus and fallopian tubes, arrange the projections to be carried out and take radiographs.
- g. After all the projections are done then the vaginal area is done.

Insertion of contrast media using a catheter

- a. After the patient is placed in a lithotomy position, the vaginal area is cleaned using a disinfectant, and antiseptic medication is also given to the cervical area.
- b. A speculum is used to open the vagina and make it easier for the catheter to enter, then the inside of the vagina is cleaned with betadine, then a uterine sond is inserted to measure and direction of the uterus.
- c. A syringe filled with contrast media is attached to one end of the catheter, before the catheter is filled with contrast media until the catheter lumen is full.
- d. With the help of long forceps, the HSG set is slowly inserted into the external uterine ostium
- e. The catheter balloon is filled with approximately 3 ml of sterile water until the balloon inflates between the internal and external ostium, this balloon must be tightly connected to the cervical canal, then the speculum is removed.
- f. The patient is positioned in the middle of the examination table and begins to inject 6ml or more of contrast media
- g. Contrast media will fill the uterus and fallopian tubes, adjust the projections to be carried out and take radiographs
- h. The balloon is deflated and the catheter can be withdrawn slowly
- i. After all the projections are done, the vaginal area is cleaned.

Examination projections

For the introduction of contrast media with the HSG set and the same projection catheter, the photo is taken with the following projection

1. AP projection

This AP projection is used for photo plans, projection after inserting contrast media. The procedure is as follows Patient Position: The patient lies supine on the examination table for plan photos, in the lithotomy position when inserting the HSG set or catheter and for AP projection after inserting contrast media. Object position: True AP pelvic area and set the MSP of the body in the middle of the cassette or examination table. Arrange the tapes according to the objects [22]. Central ray: vertical perpendicular to the film Central point: 5 cm proximal to the symphysis pubis. Image Criteria:

1. The pelvic cavity as seen in the AP projection should be centered at the midpoint of the cassette.
2. The catheter balloon must be on/in the cervix
3. Contrast medium is visible from the peritoneum if one or both uterine tubes are good
4. Appropriate density and short scale contrast reveal the anatomy and contrast of the media
5. The marker is clearly visible on the examination film.



Figure 4. HSG image using the HSG set



Figure 5. HSG image using catheter

c. Expertise Results

The results of Dr. Radiology, Columbia Asia Hospital, Medan, Hyster salpingography (HSG). Through the cervical adapter, 5cc of non-ionic contrast fluid is inserted into the cervical canal, the results are as follows:

1. The uterus is anteflexed [23].
 2. The uterine cavity is normal in size with flat edges and no visible filling defects inside.
 3. The caliber of the fallopian tubes and fimbriae is still normal and there is no free left and right peritoneal spill.
- Concl: Non Patency of both fallopian tubes.

Discussion

The HSG image with the suspicion of non-patency of both primary infertility fallopian tubes is an image that can show an optimal anatomical picture of the uterus and fallopian tubes and can show pathological abnormalities precisely and accurately to make a diagnosis [24].

1. Problem Formulation

After carrying out a Hystero Salpingography (HSG) radiography examination with suspicion of non-patency of both fallopian tubes at the Radiology Installation of Columbia Asia Hospital in Medan, the author received a problem, namely: "What is the picture of Hystero Salpingography (HSG) radiography with a good suspicion of non-patency of both fallopian tubes?".

2. Cause of Problem

The causes of problems from Hystero Salpingography (HSG) examination with suspicion of non-patency of both fallopian tubes are:

- a. Contrast media does not completely fill the uterus and salpinx (contrast media spills)
- b. Inappropriate use of an X-ray aircraft.

3. Efforts made to overcome the problem

The efforts made by the author to overcome the problems that arise in Hystero Salpingography (HSG) radiography with suspected non-patency of both fallopian tubes are:

a. Projection Aspect

To obtain optimal imaging results in cases of Hystero Salpingography (HSG) with suspected non-patency of both fallopian tubes, it is best to do it with an Antero-posterior projection as the basic and additional projections, namely the Oblique LPO and RPO projections as additional projections. However, because the image results are optimal, the projection used is only the antero-posterior projection [25].

b. Aspects of contrast media injection

1. When using a catheter, patients feel more comfortable in injecting contrast media, the work is more efficient and faster, but if using a contrast media catheter it will stick to the catheter balloon, which will cover the image of the cervical mouth due to spillage of contrast on the catheter, thus affecting the optimal image.
- b. When using the HSG set, the contrast media does not spill quickly and the contrast media does not cover the image, but in terms of patient comfort, when using the HSG set, the patient feels more pain and tenderness in the cervix caused by clamping.

c. Aspect of the area of the irradiation field,

In the HSG examination, only as wide as the object being examined is the upper border of the lumbar 5 and the lower border of the proximal femur [26]. If the area of the field is not used according to the needs, it will result in greater scattered radiation, therefore it is better if the area of the irradiation field is appropriate to the size of the object [27].

d. Aspects of exposure factors

The exposure factor used during HSG examination must be adjusted to the thickness of the object being photographed so that it can show optimal sharpness, contrast and detail.

e. Patient aspect

Because the patient feels afraid and uncomfortable being examined, the patient's husband needs help to help relax the patient's condition so that the patient is comfortable when being examined by the radiologist and radiographer.

f. Radiographer Aspect

To expedite the course of the examination, the radiographer must provide an explanation of the procedure to be carried out so that the examination can be carried out smoothly and the patient must sign a letter about the contrast media injection [28].

g. Aspects of patient comfort

Because the patient's position during the examination is supine on the examination table, a bandage is given so that the patient feels comfortable during the examination.

4. CONCLUSION

After the author discusses the problems described above, several conclusions can be drawn, namely:

1. During the Hystero Salpingography (HSG) examination, before the examination, the patient is given instructions not to have sexual intercourse 9-10 after menstruation so that the mucous membrane in the uterus is calm. And explains the examination procedures such as injecting contrast media with a catheter, and must also sign a permission letter. providing contrast media [29].
2. In the Hystero Salpingography (HSG) examination, the author uses the AP supine projection. Oblique projection (LPO/RPO) is performed if the image obtained is not optimal, for example the position of the object is not well shown in the AP supine projection and the fallopian tubes are twisted inward so additional projection must be used [30].
2. The Hystero Salpingography (HSG) examination uses a catheter.
3. For Hystero Salpingography (HSG) examinations, it is best to use water soluble contrast media.
4. In the Hystero Salpingography (HSG) examination, the X-ray aircraft used is general X-ray.

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