

# Examination Barium Follow Through At home on suspicion of stenosis General Hospital Haji Adam Malik

Nuryatno<sup>1</sup>, Ester Pinem<sup>2</sup>, Boy Parlindungan<sup>3</sup>

<sup>1,2,3</sup>ATRO Yayasan Amal Bhakti Sinar Medan, Jl. Haji Muhammad Joni No.50, Medan, North Sumatra 20 216

**Abstract**-Barium Follow Through examination is a radiological examination tractus digestive (intestinal) by inserting Ba SO<sub>4</sub> through the oral (mouth). The aim is to show the anatomy of the inspection and a narrowing of the gastrointestinal tract (GI tract wall thickening) in the intestine. The examination was conducted using an X-ray plane general X-Ray (Radiography / fluoroscopy) Brand: Hitachi, Type DR 155 VC, capacity of 500 mA. The results of radiological examination with diagnoses of duodenal stenosis

**Keywords:** Tractus digestive, Barium Follow Through, duodenal stenosis

## 1. Introduction

Barium follow-through can didefinisikan as a radiological examination of the small intestine which is performed by administering contrast media through the mouth. (Ballinger, 1986). Many things can interfere with the digestion of food, one of which is caused by a duodenal stenosis. The cause of stenosis related to age groups attacked and location of the stenosis. Duodenal stenosis is believed to result from failure in the process of formation of the biliary and pancreatic embryology structure during the fetal period, and acute intestinal narrowing this is one emergency surgery in children. To determine the provisional diagnosis of a doctor then examined radiographically barium follow-through on suspicion of duodenal stenosis.

## 2. Methods of Implementation

### 2.1 Inspection report

#### 1. Patient identity

Name : By.L  
Gender : Male  
Address : Hamlet II Sei Besar Kuala Indah village district. Sei Like coal.  
Clinical Examination of Barium Follow Through on suspicion of duodenal stenosis.  
Age: 1 month / 11 hsr

#### 2. Pelaksanaan Pemeriksaan

##### a) Photo Request

First of all the patient (patient's family) bring a referral letter addressed to radiology are plain abdominal request, but after plain abdominal dilakukan need for further investigation is the examination Barium Follow Through. After barium follow-through registered the letter of request be brought into the examination room and read by the clerk and implement appropriate shooting procedures appropriate to the circumstances of the patient.

##### b) tools preparation

Aircraft X-rays used in radiography barium follow-through on suspicion of duodenal stenosis at Dr HA Malik, is a brand of Siemens. Before performing radiographic examination barium follow-through with duodenal stenosis suspicion beforehand prepared the things needed for the examination of such x-rays and do the best turn on the heating in accordance with the procedures of the X-ray plane. Then be prepared kaset yang going to be used is the size 24cmx30cm. R marker to locate the anatomy of the organ that is going to be examined as well as the patient's identity, the film used types of green sensitive. The X-ray data plane used in this investigation are:

brands Aircraft : Hitachi  
Type : DR-155 VC  
Jumlah Tube : 2 pieces  
Kapasitas Pesawat : 500 mA, 150 kV  
Pelayanan Pesawat:  
Radiography / fluoroscopy

input : 160 VA  
 WaktuEksposi : 0.04 s - 5 s



**Fig 1.** Aircraft Rongen (Radiography / Fluoroscopy)

Caption:

- 1) X-ray tube
- 2) Colimator
- 3) compression tools
- 4) the examination table
- 5. Cassette tray.
- 6. TV monitor
- 7. Table control
- 8. Image Intensifier

**c) patient preparation**

In its implementation is not required special preparation. Then inform the patient's family about what to do during the examination. Before the examination conducted submit a letter of approval (informed consent), if the patient's family agreed to do the inspection, the letter signed by the patient's family.

**d) Preparation of contrast media**

Before contrast media taken by the patient, first conducted a preliminary picture. Then put a water soluble contrast diluted in water as much as 50cc with a ratio of 1: 4, kontas media put as much water as much as 10cc and 40cc, income through oral contrast media.

**3. Radiography techniques**

Projections were made on barium follow-through on suspicion of duodenal stenosis are as follows:

**a. Antero-posterior projection of the abdominal cavity (introductory photo)**

Purpose: To view the patient's general condition and preparation of the patient.

Patient position: supine (lying flat) diatasmaja examination.

Positions of: Focus mid sagittal plain in the mid line objects on the table and place the middle of the movie to the upper limit and lower limit xyphoideus processus symphysis pubis, the cassette is placed below the object using a grid. Place both shoulders at the same transverse plane and both hands placed on the chest. Eksposi performed during exhale.

FFD : 90cm  
 size cassette : 24cmx30cm  
 Central Ray : vertical  
 Central Point : In the mid films  
 shooting conditions : 40kv, 14mAs



Fig 2.Photo Introduction abdominal cavity

Caption:

1. costae
2. lumbar

criteria pictures : Looks general state of the left and right of the abdominal cavity, with columna vertebrae in the middle of the film. Costae looked left and right.

**b. Antero-posterior projection is done with fluoroscopy techniques and observed on a TV monitor (min-1 after drinking contrast media)**

Objective: To show the general abdominal cavity filled with contrast at 1 minute.

Patient Position: Sleeping on the examination table

Position of the object: Focus mid-sagittal plane at the mid line object on a table and place the middle of the movie. Put the shoulder in the transverse plane. Eksposi performed during exhale.

- |                      |                  |
|----------------------|------------------|
| FFD                  | : 90cm           |
| Central ray          | : vertical       |
| Central Point        | On the mid-movie |
| The size of the film | : 24cmx30cm      |
| shooting conditions  | : 40kv, 14 mAs   |



Fig 3. 1 minute after drinking contrast media

Caption:

- 1) side
- 2) lumbar

criteria pictures : Shows images of columna vertebral dipertengahan film. Looks kotras media began to fill in part of the stomach.

**c. Antero-posterior projection is done with fluoroscopy techniques and observed on a TV monitor (10th minute after taking contrast media)**

Purpose : To show the general abdominal cavity filled with contrast medium in the 10th minute.

patient position : Sleeping on the examination table.

position of the object : Focus mid-sagittal plane at the mid line object on a table and place the middle of the movie. Put the shoulder in the transverse plane. Eksposi performed during exhale.

FFD : 90cm

Central ray : vertical

Central Point : On the mid-movie

The size of the film : 24cmx30cm

shooting conditions : 40kv, 14mAs



Fig 4. 10th minute after taking contrast media

Caption:

1. gastric
2. Lumbar
3. Crista iliaca

Criterion image: shows images of columna vertebral mid-movie. Looks crista iliaca as the lower limit. Shows images of contrast media fills the entire hull.

**d. Antero-posterior projection is done with fluoroscopy techniques and observed on a TV monitor (30th minute after taking contrast media)**

Purpose : To show the state of the abdominal cavity filled with contrast medium in the 30th minute.

The position of the patient : Supine (lying flat) on the examination table.

position Objects : Focus mid-sagittal plane at the mid line of table and place the object in the middle of the film with an upper limit and a lower limit xypoideus processus symphysis pubis. Eksposi performed during exhale.

FFD : 90cm

Central ray : vertical

Central point : On the mid-movie

The size of the film : 24cmx30cm

shooting conditions : 40kv, 14 mAs



**Fig 5.** 30th minute after taking contrast media

Caption:

- 1) side
- 2) duodenum
- 3) lumbar

criteria pictures : Looks columna vertebral picture is in the middle of the movie. Appears to contrast media began to fill the duodenum.

**e. Antero-posterior projection is done with fluoroscopy techniques and observed on a TV monitor (in the 60th minute after taking contrast media)**

Purpose : To show the state of the abdominal cavity filled with contrast medium in the 60th minute.

The position of the patient : Supine (lying flat) on the examination table.

position Objects : Focus mid-sagittal plane at the mid line of table and place the object in the middle of the film with an upper limit and a lower limit xypoideus processus symphysis pubis. Eksposi performed during exhale.

FFD : 90cm

Central ray : vertical

Central point : On the mid-movie

The size of the film : 24cmx30cm

shooting conditions : 40kv, 14 mAs



**Fig 6.in** the 60th minute after taking contrast media

Caption:

1. side      3. yeyenum
2. duodenum      4. ileum

criteria pictures : Looks columna vertebral picture is in the middle of the movie. Appears to contrast media have filled the entire small intestine and fill the area ileocecal.

#### 4. Film processing

In this examination used in automatic film processing stages as follows:

- 1) Cassette tapes are removed from the film opened.
- 2) Washing is done by stages, the developer - fixer - washing - drying.
- 3) After washing the films were evaluated.

#### 5. Evaluation Examination

After examination start the necessary preparations, execution and processing of shooting the film, the author gives an image evaluation as follows:

##### 1) Antero-posterior projection of the abdominal cavity (introductory photo)

- a. Looked free air picture spread in the abdominal cavity.
- b. The object is less symmetrical layout.
- c. Optimal image contrast, because it can show the difference in black and white in the abdominal cavity.
- d. Sufficient image sharpness, because mamapu show firm boundaries on the target object.
- e. Looks marker is placed on the right (R)
- f. Extensive radiation field is too wide.



Fig 7. Preliminary photo abdominal cavity

Caption:

- 1) costae
- 2) lumbar

##### 2) Antero-posterior projection performed with fluoroscopy techniques and observed on a TV monitor (min-1 after drinking contrast media)

- a. Shows images of the lumbar spine.
- b. The object is less symmetrical layout.
- c. Sufficient image contrast, because it can show the difference in black and white in the abdominal cavity.
- d. Sufficient image sharpness, being able to show the limits of the target object firmly.
- e. Looks marker is placed on the right (R).
- f. In the first minutes of contrast media began to fill in part of the stomach.



**Fig 8.** 1 minute after drinking contrast media

Caption:

- 1) side
- 2) lumbar

**3) Antero-posterior projection performed with fluoroscopy techniques and observed on a TV monitor (10th minute after taking contrast media)**

- a. Shows images of the lumbar spine and Crista iliaca as the lower limit.
- b. Objects seem less symmetrical layout.
- c. Sufficient image contrast, because it can show the difference in black and white in the abdominal cavity.
- d. Sufficient image sharpness, being able to show the limits of the target object firmly.
- e. Looks marker is placed on the right (R).
- f. In menitke ten contrast media fills the entire hull.



**Fig 9.** 10th minute after taking contrast media

Caption:

- 1) side
- 2) lumbar
- 3) Crista iliaca

**4) Antero-posterior projection performed with fluoroscopy techniques and observed on a TV monitor (30th minute after taking contrast media)**

- a. The object is less symmetrical layout.
- b. Looks lumbar vertebrae are in the middle of the movie.
- c. Looks irradiation field area is too wide.

- d. Sufficient image contrast, because it can show the difference in black and white in the abdominal cavity.
- e. Sufficient image sharpness, being able to show the limits of the target object firmly.
- f. Looks marker is placed on the right (R).
- g. Dimenit thirtieth kontas media began to fill the duodenum



**Fig 10.** 30th minute after taking contrast media

Caption:

- 1) side
  - 2) duodenum
  - 3) lumbar
- 5) **Antero-posterior projection performed with fluoroscopy techniques and observed on a TV monitor (in the 60th minute after taking contrast media)**
- a. The object is less symmetrical layout.
  - b. Looks columna vertebral is in middle of the movie.
  - c. Looks irradiation field area is too wide.
  - d. Sufficient image contrast, because it can show the difference in black and white in the abdominal cavity.
  - e. Sufficient image sharpness, because mamapu show firm boundaries on the target object.
  - f. Looks marker is placed on the right (R).
  - g. Dimenit sixtieth contrast media have filled the entire small intestine and fill the area ileocekal.



**Fig 11.** in the 60th minute after taking contrast media

Caption:

- 1) side
- 2) duodenum

- 3) Yeyenum
- 4) ileal

### 3. Results and Discussion

#### a. Formulation of the problem

The formulation of the problems arising in barium follow-through is as follows:

"What efforts are made to obtain the optimal radiographs?"

Optimal radiographic examination Barium Follow Through on suspicion of stenosis, namely:

- 1) Looks radiographs with an upper limit to the lower limit xyphoideus processus symphysis pubis.
- 2) During an investigation Barium Follow Through on suspicion of stenosis author using high speed movie screen combined with intensifying screen types fast.
- 3) Barium Follow Through examination on suspicion of stenosis requiring contrast media that can demonstrate a clear and accurate diagnosis.

#### b. The cause of the problem

The barium follow-through on suspicion of duodenal stenosis in infants has its own difficulty level, then the cause or matter, namely:

- 1) Patients who can not be invited to cooperate due to the condition of patients who were age of the baby.
- 2) Setting the position of the patient has its own degree of difficulty because the patient is still infancy.
- 3) Eksposi factor setting in patients should be adjusted because the patient is still infancy.

#### c. Efforts Guide To Solving

So, techniques and efforts to dilakukan to solve the problem is:

- 1) Before the examination procedure done, you should first inform pasien family about what to do on the investigation so that the patient did not move much and there is no repetition of photos.
- 2) In this case the radiographer request assistance to families of patients so as to project the patients properly.
- 3) Preferably eksposi factor should be adjusted to the object and liquid processing so that patients are not much exposed to radiation for the patient is still infancy.

### 4. Conclusion

From the results of the examination Barium Follow Through on suspicion of duodenal stenosis, it can be concluded

1. On examination Barium Follow Through on suspicion of duodenal stenosis, due to the age of patients still babies and have their own level of difficulty that it is necessary to co-operation on the patient's family, for the smooth running of the examination and avoid repetition due to the movement of the patient's photo.
2. In this case the radiographer request assistance to families of patients that can project the patient, then radiation protection Barium Follow Through investigation on suspicion of stenosis is very necessary for the patient's family.
3. On radiographic examination Barium Follow Through on suspicion of duodenal stenosis using the automatic processing.

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