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Management Of Thorax Radiography Examination With Clinical Pleura Effusion In Radiology Installation Of Sundari Hospital

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ABSTRACT

One of the clinical conditions in the thorax is pleural effusion, which is an abnormal accumulation of pleural fluid caused by the formation of pleural fluid faster than the absorption process. Technique. The aim of this study was to determine the thorax examination procedure in clinical pleural effusion at the Radiology Installation of Sundari General Hospital. This type of research is qualitative using a descriptive method, a case study approach. Data collection methods are, observation, interviews, and documentation. From the results of the research, the management of thorax examination in clinical pleural effusion at the Radiology Installation at Sundari General Hospital, thorax examination in clinical pleural effusion requires the patient to be in an erect or standing position. According to the interview results that have been obtained, chest examination in clinical pleural effusion in the PA and lateral positions can confirm the diagnosis of clinical pleural effusion.
Keywords: *Pleural Effusion, Thorax.*

INTRODUCTION

Indonesia is geographically located between two continents, namely the Asian Continent and the Australian Continent and is located between two oceans, namely the Indian Ocean and the Pacific Ocean. This condition makes the location of the State of Indonesia very strategic because Indonesia's position between two continents and two oceans allows it to be a crossroads of world traffic, both air and sea traffic and as a point of intersection of world economic activities, between trade in industrial countries and developing countries. Pleural effusion is a chronic infectious disease of the respiratory tract. According to the World Health Organization (WHO) this disease is not a disease entity but is a symptom of a serious disease that can threaten the lives of sufferers (Ministry of Health of the Republic of Indonesia, 2008). Geographically this disease is found in all countries, even becoming a major problem for developing countries including Indonesia. This is due to environmental factors and is more often caused by tuberculosis infection. Pleural effusion disease can be found throughout the year and is more often epidemic in an area. Pleural effusion is a collection of fluid in the pleural space located between the visceral and parietal surfaces, the primary disease process is rare but is usually a secondary disease to other diseases. Normally, the pleural space contains a small amount of fluid (5 to 15ml) which functions as a lubricant that allows the pleural surface to move without friction (Smeltzer C Suzanne, 2002). The high number of cases of pleural

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effusion is caused by the delay in patients to check their health early so that it hinders daily activities and death due to pleural effusion is still often found. The level of severity of pleural effusion is determined by the amount of fluid, the speed of fluid formation and the level of pressure on the lungs. If the effusion is large, lung expansion will be disrupted and the patient will experience shortness of breath, chest pain, non-productive coughing and even lung collapse and as a result respiratory failure will occur. In this case, the role of Radiology as a science that studies the use of electromagnetic wave radiation, one of which is useful in the health sector as a supporting basis in establishing a diagnosis in patients with pathological disorders of the respiratory system. Radiological examinations have a high value in establishing a diagnosis of massive pleural effusion, although they are not useful in determining the causative factors. On chest X-ray, there is a homogeneous clouding with a sunken or flat upper border, and a blunt costophrenic angle. A small amount of fluid will give an image of blunting of the costophrenic angle. Fluid of less than 100 ml will not be visible on chest X-rays made with conventional techniques. A uniform shadow can only be seen clearly when the effusion is more than 300 ml. If the search is not visible on the postero-anterior (PA) image, it is recommended to take a photo in the lateral decubitus position.

METHODS

The type of research used in this study is qualitative descriptive with a case study approach. Qualitative research is a study that produces descriptive data (descriptions in the form of written or spoken words of each behavior of people observed). Case studies are included in descriptive analysis research, namely research that is conducted focused on a particular case to be observed and analyzed carefully until complete. Here, a sharp analysis is carried out on various factors related to the management of thorax radiography examinations in clinical pleural effusion at the Sundari General Hospital radiology installation.

Data collection and collection methods

1. Observation Method

Observation is a systematic observation and recording of elements that appear in a symptom. The author conducted direct observations of thorax examinations with clinical pleural effusion at the Sundari General Hospital installation.

2. Interview Method

Conducting interviews by asking questions to patients and families related to their illness, in addition, the author also held consultations with radiographers, radiology specialists and other sections related to this case study report.

3. Documentation Method

Documentation is a technique for collecting data and information through searching and finding evidence. This documentation method is a collection method that comes from non-human sources. One of the documentation materials is a photo. Photos are useful as a source of

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information because they are able to freeze and describe events that occur. The author collected data by obtaining medical documents such as duplicating a request letter for a thorax examination, photographing the results of a thorax examination radiograph and the results of a thorax examination expertise.

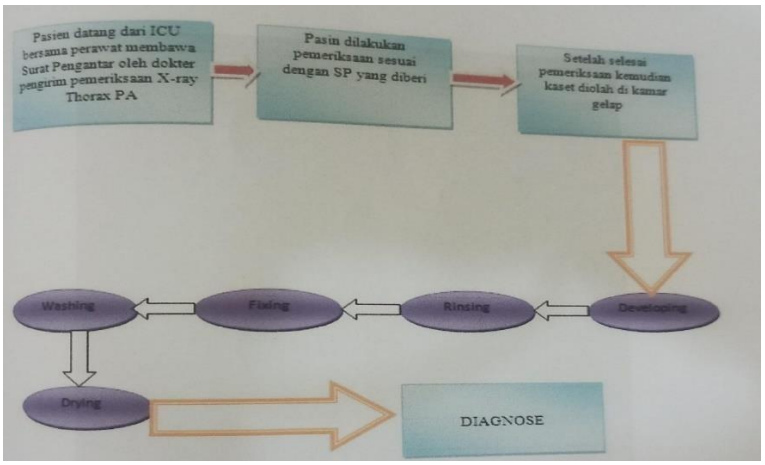
RESULTS AND DISCUSSION

Results

Figure 1. X-Ray Machine

Source: Research Results, 2021

Radiophotography is the process of recording shadows on a radiography film using X-rays. The use of an X-ray machine in the Radiology Installation of Sundari Hospital is based on Conventional Radiography. Film processing is done manually and is carried out in a dark room. Developer fluid and fixer fluid as well as clean water have been prepared. The following is the flow of patient examination and management of radiography films.



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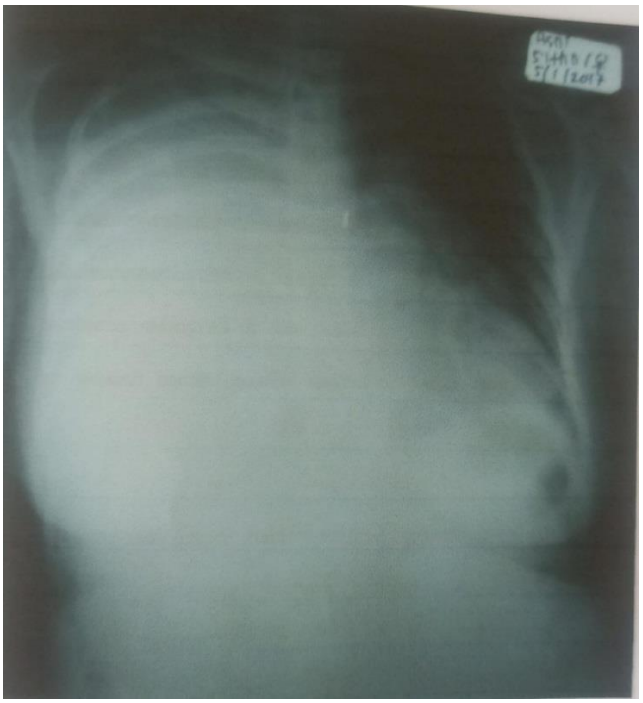
In the chest radiography examination in the PA position in a patient named Mrs. Asni Basilkan, the radiographic image is as follows:



The visible image structure from the radiographic image above is: Coverage of almost the entire right lung field with the heart pushed to the left contralateral. Bones and soft tissues appear normal.

In the chest X-ray examination above in an upright position, pleural fluid appears in the form of a homogeneous cover covering almost the entire right lung field and is relatively radiopaque running from the upper lateral to the lower medial direction. Because the fluid fills the hemithorax space, the heart and left lung tissue will be pushed towards the central/hilus to the left contralateral. From the radiographic image above, it can be ascertained that the amount of fluid that can be seen on an upright chest X-ray is more than 250-300 ml. Radiological images cannot show the type of fluid in the chest cavity, but with additional clinical information or other supporting examinations such as laboratory results, the type of fluid can be estimated.

CONCLUSION

Pleural effusion is a condition in which there is an accumulation of fluid in the pleura in the form of transudate or exudate caused by an imbalance between production and absorption in the capillaries and visceral pleura. Postero-Anterior (PA) erect/semi-errect and Lateral Decubitus chest radiographs are still the most necessary to determine the presence of pleural effusion at the beginning of the diagnosis. On an upright chest radiograph, pleural fluid appears

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in the form of a homogeneous veil covering the lower lung structure which is usually relatively radiopaque with a relatively concave upper surface, running from the upper lateral to the lower medial. Because the fluid fills the hemithorax space, the lung tissue will be pushed towards the central/hilus, and sometimes pushes the mediastinum towards the contralateral.

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