International Journal of Economic, Technology and Social Sciences
url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 4 Number 2 page 274-278

Articulatio Genu Examination Technique With Suspected Osteoarthritis At North Sumatera University Hospital

Jonas Ardianta
Akademi Pendidikan Kesehatan (Apikes) Talitakum Medan, Indonesia
Jl. Sei Batang Hari No.81 A kelurahan Babura Kecamatan Medan Sunggal
Email: jonasardianta6@gmail.com

ABSTRACT

The articulatio genu is a complex hinge joint and is formed by the distal part of the femur bone, condyle, epicondyle, proximal part of the tibia bone. Osteoarthritis is a degenerative joint disease that appears to be related to the aging process, obesity or joint trauma. The projection used in the Articulatio Genu examination with suspected Osteoarthritis at the North Sumatra Hospital Medan Installation uses the AP Weigh Bearing projection and lateral projectionThe results of this research are examination of the genu with suspected osteoarthritis using the AP Weigh Bearing projection.
Keywords: Articulatio, Genu, Osteoarthritis, Suspect.

INTRODUCTION

The knee joint is a joint that is quite high in Osteoarthritis in Indonesia, reaching 15.5% in men, and 12.7% in women. Osteoarthritis patients usually complain of pain when doing activities. In more severe degrees, it can be felt continuously so that it can interfere with patient mobility. The knee joint is a hinge joint with changes and is formed by both femoral condyles that articulate with the superior surface of the tibial condyles. The patella is located on the smooth patellar surface of the femur and above it the patella slides when the joint moves. The patella is in front of the main joint parts, but does not enter the knee joint formation. The etiology of Osteoarthritis is not known for sure, there are several risk factors, namely age, gender, ethnicity, and genetics. In Osteoarthritis there are many problematic physiotherapy including stiff knee joints <30 minutes in the morning, swelling in the knee, muscle weakness, deformity, limited movement in the knee joint, disturbances in the squatting position to standing, impaired gait due to muscle weakness and joint instability and decreased functional abilities such as walking. Signs and symptoms of Osteoarthritis include joint pain, restricted joint movement, morning stiffness, crepitation, joint enlargement (deformity), and changes in gait. These signs and symptoms have an uncomfortable effect on the patient. To reduce the symptoms above, physiotherapy is needed. To determine osteoarthritis abnormalities radiologically, a radiographic examination of the genu or knee joint is performed.

METHODS

This study used qualitative research, with a case study approach that aims to examine and find out information about the procedures and techniques for examining the genu

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articulation with suspected osteoarthritis. The subjects of this case study were 3 radiographers at the University of North Sumatra Hospital. This study was conducted in August 2018 at the Radiology Installation of the University of North Sumatra.

Data Collection Methods

1. Observation: The author directly observed the Articulatio Genu Radiographic examination procedure with suspected osteoarthritis at the Radiology Installation of the University of North Sumatra Hospital
2. Interview: By conducting a direct interview with the Radiographer
3. Documentation Study: By taking a photo of one of the patients with an articulation genu examination in a case of osteoarthritis at the University of North Sumatra Hospital.

Data Processing and Analysis Method

The analysis began with an observation of the course of the Articulatio Genu radiographic examination with suspected Osteoarthritis at the Radiology Installation of the University of North Sumatra Hospital. From this observation, the author found several problems that underlie the selection of the title of the scientific paper. After that, the author conducted an interview with the radiographer related to the subject of the problem taken. The results of the interview were collected and data selection was carried out to answer the research objectives. Furthermore, using a descriptive method with a case study approach. The data that can be processed is then analyzed by comparing the results of observations and existing theories until conclusions can be drawn.

RESULTS AND DISCUSSION

Results

Genu articulation examination technique with suspected osteoarthritis at the University of North Sumatra Hospital

a. Patient Identity

Name	:	Mrs. R
Age	:	62 years
Gender	:	Female Date of examination: August 27, 2018
Cause of the problem	:	Knee pain, swelling Diagnosis: Osteoarthritis

b. Patient history

c. Procedure for radiography examination of genu articulation with osteoarthritis:

1. Administrative process
2. Patient preparation
   a. Preparation of tools and materials is X-ray machine

Radiology tools for genu articulation examination as follows:

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Figure 1. X-Ray Machine

Source: Research Results, 2023

Figure 2 Computer and keyboard

Figure 3 Cassette

Figure 4 Printer

Figure 5 Market

Source: Research Results, 2023
Examination Technique

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The patient comes to Radiology with a request letter for a photo, then the patient is asked to wait in the waiting room, then the radiology officer calls the patient and is asked to enter the X-Ray room.

a. AP Weigh Bearing Position
   1. Patient position: The patient stands upright facing forward
   2. Object position:
      a) Set the knee in the middle/wall stand with a true AP position
      b) Ask the patient to stand upright with the knee (Knee) fully extended and the body weight balanced on both feet
   3. Rays: FFD: 90 cm
      CR: Horizontal perpendicular to the
      CP cassette: 1/3 cm below the apex of the patella

This is as the author with the following response (I) the patient is given a weight bearing projection by standing upright and the genu is in the place where the CP cassette is 1/3 below the apex of the patella. Other patients are told not to move during the examination (RI). If the patient who comes is unable to stand because the patient feels pain and cannot stand for long, the patient's position is changed to eupine or sitting. This is in accordance with the opinion of the respondents as follows: "in the genu examination if the patient cannot stand then the patient is told to lie down/sit on the examination table" (R2)

b. Lateral project
   1. Patient position: the patient stands upright with the side to be photographed close to the wallstand
   2. Object position: for the one to be examined attached to the wallstand and in the middle of the patient's instructions not to move
   3. Rays: FFD: 90 cm
      Cp: Horizontal perpendicular to the cassette
      Cp: 1/3 cm below the apex of the patella

Reading Results

The position of the bone is good, osteophytes are visible on the eminentia intrcondly loidea, posterior soft tissue classification of the genu, good joint gaps, no point/blastic lesions. Impression: OA left genu grade 1.

CONCLUSION

The projections used in this examination are AP Weight Bearing and Lateral, this can clearly show osteoarthritis if the patient is unable to stand the patient should be told to sit/lie on the examination table. There are advantages and disadvantages of AP and lateral projections in the supine position, namely: Advantages, can be compared narrowing 2 (joints) clearly in one projection. Reduces the patient's radiation dose. Disadvantages, most patients are less comfortable with the position., Radiographers in adjusting the patient's position must be more careful.

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