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A CT-SCAN paranasal sinuses Sinusitis Maxillaris on suspicion Duplex On General Hospital Haji Adam Malik

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Abstract- paranasal sinuses are cavities in the head diseiktar nose. The sine function is to lighten the weight of the head. Sinus on teridri head of the frontal sinuses, sinus maxillaris, sinuses and sinus spenoidalis ethmoidalis. Maxilaris Sinusitis is an inflammation of the sinus cavities maxillaris, resulting in the patient feels heavy because of the suspicion of inflammation and fluid. To show a CT-Scan paranasal sinuses with the Toshiba brand, the model CXXG-005A. The results of radiological examinations with the diagnosis: Sinusitis Maxillaris (duplex); Maxillaris ostium of the right and left closed.

Keywords: Sinus, CT Scans, frontal sinusitis, Maxillaris and Ethmoidalis.

1. Introduction

Paranasal sinuses are the sinuses or cavities that are around the nasal (nose) or a hollow cavity in os.maksila, os.frontal, os.sphenoidale and os.ethmoidale are generally coated mukoperiosteum and contain air (Snell, 1993). Nose or nasal an air duct of the first, has two holes (kavumnasi), separated by the nasal septum (septum nasi), in which there are feathers nose useful to filter the air, dust and dirt into the nostril (Syaifuddin, 1997).

Sinusitis is the inflammation of the sinus mucosa or mucous membranes (Handikin, 2012). The main cause is salesma which is a viral infection which can then be followed by a bacterial infection. Sinusitis there are two kinds of multisinusitis that when the multiple sinus and pansinusitis that when the entire paranasal sinuses. The most commonly affected are the sine maxillaris, this is due to sinus sinus maxillaris is the largest, essentially the basic root of the tooth so that it can come from a tooth infection. These infections can strike the right and left sinus maxillaris so-called sinusitis maxillaris duplex.

The number of checks that can be performed on patients with sinusitis may not be able to enforce a proper diagnosis. Therefore, the examination required systematic and focused in order to determine the diagnosis. Plain X-rays, the most common diagnostic tool, less conscientious enough to detect a small sinus blockage (Metson, 2006).

CT-Scan is an examination excels at studying the paranasal sinuses well as can analyze in detail the bones and soft tissue forms (Rasad, 2005). Computed Tomography is a picture that was built by computer using X-rays collected from various points around and form part of the so-called scanned so as to produce cross-sectional illustration tomograaphic plane (slice) is sliced from the body (Balinger, 1986). CT-Scan plane has components that consist of an examination table, gantry, computer, TV screen monitor, image recording, terminal operators and multiformat camera (Ridowahyudi, 2010)

2. Inspection report

A. Patient identity

Name : Mr. NG
Age : 60 years
Gender : Male
No.RM : 00539178
Date of inspection : January 2016
doctors sender: Dr. M. Rahman, SpTHT
doctors reader : Dr. Armen H Rangkuti, sprad

B. Examination procedure

1) patient preparation
   Basically there is no special preparation for the patient in the examination paranasal sinus CT scan. Patients are encouraged to remove the objects that give rise to artifacts such as earrings, glasses, necklaces and others. The patient is given an explanation in order to remain calm and not to move during the police interrogation.
2) Preparation Tools and Materials
   Preparation tools and materials used in the examination of paranasal sinus CT scan on suspicion of sinusitis maxillaris duplex in Haji Adam Malik Hospital are as follows:
   a. CT-Scan plane with specification:

brands	: Thosiba
Model	: CXXG-005 A
frequency	: 50/60 Hz
Input power Max	: 55 kVA
output	: 120 kV / 300 mA
	135 kV / 260 mA
No.seri tube	: A 5592098
filter default	: Al
generation tool	: III / Helicle

gantry

the examination table

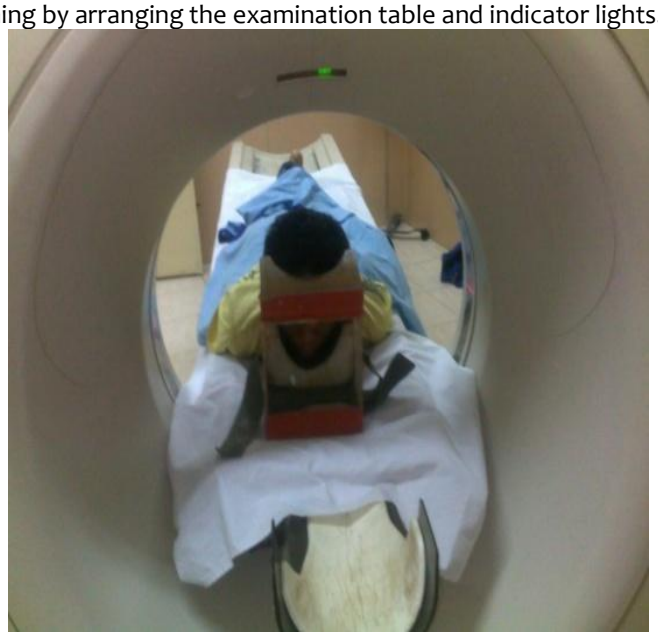
Picture 1. Aircraft CT-Scan Thosiba CXXG-005 models A

   b. Head fixation device
3) Mechanical Inspection
   a) The position of the patient
      Patients are positioned to sleep on your stomach (prone) on the examination table, both on the patient's limb is beside the patient's body, MSP body parallel to the longitudinal positioning lights.

Picture 2. Position the patient CT scan of paranasal sinuses

b) position of the object

The head of the patient is placed in a head hyperekstensi holder, paranasal sinus area are in the area to be scanning by arranging the examination table and indicator lights.



Picture 3. Position the object in the gantry

c) The checking procedure

1) Adjust the position of the patient in order to MSP body parallel to the longitudinal positioning lights.
2) Enter patient data include name, age, sex in the available space on the screen.
3) Select / click protocol group Head and Sinus.
4) Select comfirm, and then press OK.
5) Wait until the X-Ray button lights up, when it is lit, press the button twice.
6) On the screen will appear scanogram image and select rotate all to set penyudutan to get a piece coronal slices, the scanning area taken on paranasal sinus area to the anterior border os.nasal / rice or frontal sinus cavity and sinuses sphenoidalis posterior border / boundary nasopharyngeal cavity.

Picture 4. Scanogram paranasal sinuses

7) Click confirm and press OK.
8) Then the lights on the buttons enable to penyudutan / tilt gantry will light up, press the button until the light on the button stops flashing.
9) The light on the X-Ray button will light up, press the button once, then the light on the key will meyala again and press once again the X-Ray button, then the scan will run tasks automatically until the last slice.
10) Then press and click the confirm quit
11) Then if an idea is good then the image has to be printed or printed.

C. evaluation of Image

Patient's name : Mr. N. G
Age / Gender : 60 Years / male
No.RM : 00539178
Date of inspection : January 2016

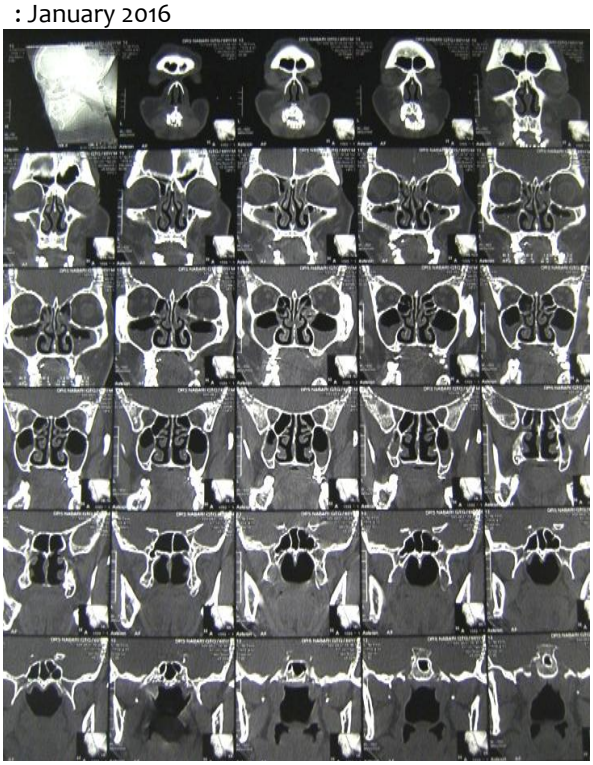


Figure 5. Results of paranasal sinus CT scan

middle turbinate

middle meatus

The left maxillary sinusitis

Gambar6, Results paranasal sinus CT scan coronal cuts

D. Check up result :

CT scan of paranasal sinuses

Perselubungan in sinus maxillaris looked right and left, the sinus ostium maxillaris the right and left closed. Right and left frontal sinus sheathed. Sinus ethmoidalis sheathed right and left. Sinus sphenoidalis right and left clear. Right and left nasal concha is not widened. Looks a little to the right septal deviation.

E.Kesimpulan Radiological:

Sinusitis maxillaris duplex, duplex and frontal ethmoidalis duplex. Maxilaris ostium of the right and left closed.

3. discussion of Problems

A. Formulation of the problem

After the authors discuss literature review and observe the inspection of paranasal sinus CT scan on suspicion of sinusitis maxillaris duplex in Haji Adam Malik Hospital in Medan, the author encountered some problems that can be formulated with a formulation as follows:

1) How examination techniques paranasal sinus CT scan on suspicion of sinusitis maxillaris duplex in Haji Adam Malik Hospital?
2) Efforts to what should be done to get an idea of paranasal sinus CT scan on suspicion of sinusitis maxillaris duplex optimally in patients who are not cooperative?
3) What are the advantages and disadvantages of CT-Scan examination on suspicion of sinusitis paranasal sinus maxillaris duplex were compared to the paranasal sinuses in conventional radiography in Haji Adam Malik Hospital?

B. Cause of the problem

The cause of the problems that arise in the implementation picture paranasal sinus CT scan on suspicion of sinusitis maxillaris optimal duplex is:

1) Mechanical inspection paranasal sinus CT scan performed in Haji Adam Malik Hospital different from a CT-scan technique paranasal sinuses according Neseth theory (2000) and Rasad (2005).
2) Patients were less cooperative during interrogations.
3) Examination of the paranasal sinuses with suspicion maxillaris duplex sinusitis can also be done with conventional radiography should not be with a CT scan, which with conventional radiography cost less and less radiation.

C. Initiatives by

The efforts made in addressing the issues that arise in the formulation of the problem, namely:

1) Aircraft CT scan used in the examination of paranasal sinuses in Haji Adam Malik Hospital is the best CT scan of the third generation single slice that produce one slice each one scan. According to the authors, the use of CT-scan plane is good enough because it can produce a picture of paranasal sinus well and can show clearly the duplex maxillaris sinusitis.

2) Examination of paranasal sinus CT scan done using axial pieces with a scanning area starts from the lower border of the hard palate to the upper limit of the cranium with the patient supine sleeping position (supine) on the examination table (Neseth, 2000). Thick slices used for axial pieces are 5 mm ranging sinus maxillaris to the frontal sinus (Rasad, 2005). Examination of paranasal sinus CT scan can also be performed using coronal pieces with the scanning area starting from field to field orbits anterior dorsum of the sella with the patient to sleep face down (prone) on the examination table and the position of the head hyperextensi (Neseth, 2000). Thick slices used to piece that is 3 mm coronal frontal sinuses start to sinus sphenoidalis (Artawijaya, 2010).
   Haji Adam Malik Hospital in Medan, on examination of paranasal sinus CT scan is not performed but only done piece axial coronal pieces with the anterior border os.nasal / rice or frontal sinus cavity and nasopharynx cavity posterior border. Thick slices used in pieces of 3 mm coronal start os.nasale until cavity nasopharynx. Coronal piece is done because it can reveal most of paranasal sinus anatomy so that it can easily detect the presence of sinusitis in the paranasal sinuses.
   According to the authors, the use of the scanning area and thickly sliced pieces on a coronal CT scan examination of paranasal sinuses is quite adequate and sufficiently effective and efficient in showing perselubungan or paranasal sinus pathology in particular sinusitis maxillaris duplex. The coronal slices can also show paranasal sinus anatomy well and can show changes in volume / shape, diseases / disorders in the soft tissue between the bones.
3) On examination of the paranasal sinus CT scan on suspicion of sinusitis maxillaris duplex, attempts were made in order to create good cooperation between the operator with all the people involved in pemeriksaan.Pasien and families of patients were given an explanation of things that are done during the inspection. Patients were asked to remain calm, not nervous and did not move during the police interrogation. To reduce or avoid patient movement, use restraining straps (belt holders). According to the authors, by making such an effort, checks can be run smoothly and get good examination results without any repetition of the examination.
4) In diagnosing sinusitis sinusitis especially maxillaris duplex can be done using conventional radiography and CT scan. Examination of the paranasal sinus CT scan has the advantage compared with conventional radiography so it is better to do. The Advantages of such examination can provide a good picture with good image contrast so it can easily differentiate between soft tissues, bones and blood vessels, fast pemeriksaanya implementation and the examination is painless and more accurate. Examination with CT-Scan also has disadvantages such as high inspection costs and greater radiation produced.

4. Conclusion

After the authors follow and observe the inspection of paranasal sinus CT scan on suspicion of sinusitis maxillaris duplex in Radiology Dr Haji Adam Malik and based on the discussion of the problems that have manifested in a scientific paper is then drawn some conclusions, namely:

1) CT-Scan aircraft used for inspection on suspicion of sinusitis paranasal sinus maxillaris duplex can be done using planes CT-Scan III generation single slice that produces one slice each one scan. However scannya time long enough so that the radiation would be substantial.
2) Examination of paranasal sinus CT scan on suspicion of sinusitis maxillaris duplex can be performed using coronal pieces with the scanning area of the anterior border of os.nasal / rice or frontal sinus cavity and nasopharynx cavity posterior margin with 3 mm thick slices.
3) In the paranasal sinus CT scan on suspicion of sinusitis maxillaris duplex, should be a good cooperation with the patient so that inspection can be run smoothly and to avoid repetition of the examination as a result of movement of the object or the patient's movements that cause blurring on the results of the examination.
4) Examination of the paranasal sinuses with CT-Scan has the advantage as the resulting picture is more accurate, painless and rapid examination, examination of the paranasal sinus CT scan also have clinical disadvantages such as the examination fee is expensive and the resulting radiation is greater.

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