2nd ICHMS & 2nd LSC

PROCEEDING

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The 2nd International Conference of Medical and Health Sciences (ICMHS) and The 2nd Life Sciences Conference (LSC) 2016

"Towards a Better Quality of Life through Interdisciplinary Research"

Yogyakarta, 9th-10th December 2016
The Alana Hotel and Convention Center

UMY ICMHS Life Sciences SOCIETY

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Chair person of The 2nd International Conference of Medical and Health Sciences and The 2nd Life Sciences Conference 2016

Welcome to Jogja, sugeng rawuh!

For the second time, the Faculty of Medicine and Health Sciences Universitas Muhammadiyah Yogyakarta is going to conduct the 2nd International Conference of Medical and Health Sciences (ICMHS) this December in vibrant Yogyakarta, Indonesia. This year we are going to collaborate with the Life Sciences Society of Pakistan for their 2nd Life Sciences Conference (LSC) with Dr. Zahid Iqbal as the general secretary.

This year's conference theme "Towards a better quality of life through interdisciplinary research" will be celebrating an era of seamless interdisciplinary integration and collaboration in scientific innovations with the involvement of more extensive topics and disciplines in the conference. We aim to exhibit the products of that kind of approach in solving challenges, improving the quality of life, and creating sustainable developments.

We are happy to announce that our conference is filled with Invited speakers from Pakistan, United States of America, Uni Emirates Arab, Malaysia and Indonesia. Presentations will be conducted in oral as well as poster that covers topics from medicine, public health, dentistry, pharmacy, biomedical to agriculture. To put more credibility to the conference we are collaborating with Isra Medical Journal and the Asian Journal of Agriculture and Biology to publish selected papers from the event. Other paper will be published in the ISBN Proceeding book.

The last but not least, enjoy the conference, start networking and sharing ideas, and let immerse yourself to the heritage cultural ambient of Jogja, sumonggo!

Yogyakarta, 1st December 2016

dr. Iman Permana, M.Kes, Ph.D.

Dean of Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta

Assalamu'alaikum Wr. Wb.

Science, especially in the areas of health and life growing more rapidly. We need to work together in the research of various disciplines to the advancement of science and to provide benefits to human life.

After successfully organized international scientific meeting last year, the Faculty of Medical and Health Sciences Universitas Muhammadiyah Yogyakarta, held the second scientific meeting ICMHS along with "2nd Life Sciences Conference". In this second scientific meeting, FKIK UMY collaborates with various researchers, among others from Pakistan, Malaysia, and the United States. Taking the theme "Towards a better quality of life through interdisciplinary research" we hope to establish cooperation with various parties to be able to contribute ideas to the civilization of human life.

Finally, we congratulate the scientific meeting in the city of Yogyakarta Indonesia. Enjoy the beautiful city of Yogyakarta with priceless historical relics. We hope that this meeting can run smoothly and provide benefits to the advancement of knowledge.

Wassalamu'alaikum Wr. Wb.

Yogyakarta, 1st December 2016

dr. Ardi Pramono, M.Kes, Sp.An.

Rector of Universitas Muhammadiyah Yogyakarta

Assalaamu'alaikum Wr. Wb.

Ladies and Gentlemen,
Welcome to the 2nd International Conference on Medical and Health Science in conjunction with the 2nd Life Sciences Conference 2016
Welcome to Yogyakarta City of Tolerance
Our Faculty of Medicine and Health Sciences has been doing such international conference almost every year for the last ten years. This and other previous conferences are the things that supporting our vision as an excellence and Islamic university, a young and global university. We will always try to keep monitoring the development of science through sending more lecturers to do the sabbatical leave overseas, doing international research collaborations and also the international conference. Each department should do this strategy of internationalization so that each department has its own network. Faculty of medicine and health science is one of the most progressive units in implementing this strategy by inviting international experts on a regular basis. This program will certainly strengthen our vision.
International conference on medicine and health sciences is a smart choice to offer our lecturers access to the most recent development of the subjects. The participants will also gain the same knowledge and latest information on medicine and health sciences. As everyone knows that the development of science and technology are faster today compared to the previous period. Information technology, computer, and other development havefastened the transformation of medicine and health science into the different and more complex stage.

Cellular technology, for instance, can be used for several functions including those that directly impacts our daily life. There is no long distance call anymore today because cellular phone can do everything we need to contact other people far from where we stand anytime anywhere. People will finally innovate cellular phone for the sake of personal health services. We will in the future using our simple cellular phone to detect our body temperature, blood pressure, even how much fat we have in our body and how much it is supposed to be. We may also be able to check the health of our body without leaving our house and order medicine without going into the drug store. Everything is almost possible as long as we think hard for the better of people in the future. Enjoy the conference and don't forget to visit our rich tourist destinations, mountains, beaches or caves (underground waterways).

Thank you

Wassalaamu'alaikum Wr. Wb.

Prof. Dr. Bambang Cipto, MA

Keynote Speech

by Head of Provincial Health Office Special Region of Yogyakarta in International Conference of Medical and Health Sciences and Life Sciences Conference

The Alana Hotel and Convention Center, Yogyakarta, December 9-10, 2016

The honorable:

- Rector of Muhammadiyah University of Yogyakarta,
- The Dean of Medical and Health Sciences Muhammadiyah University of Yogyakarta,
- The chairman of organizing committee of the international conference of medical and health,
- Distinguished guests and colleagues.

Assalamu'alaikum Warahmatullahi Wabarakatuh,
First of all, we thank God for His blessings that today we may attend the International Conference of Medical Health Towards a Better Quality of Life Through Interdisciplinary Research in Yogyakarta.

My distinguished colleagues,
In Indonesia National Long Term Development Plan (2005-2024), the Indonesian Ministry of Health have determined a paradigm shift that have governed health services in health development plan. There has been a shift from Curative Health Services to Preventive and Promotive Health Services.
Recently, Indonesia suffers from a triple burden of diseases as health development challenges. The triple burden of diseases are: 1) the backlog of common infections, undernutrition, and maternal mortality; 2) the emerging challenges of non-communicable diseases (NCDs), such as cancer, diabetes, heart disease; and 3) mental illness, and the problems directly related to globalization, like pandemics and the health consequences of climate change.

Dear colleagues,
Here are some data that show several health problems in Indonesia:

1. Maternal mortility rate in 2015 is 4,809 cases, infant mortality rate in 2015 is 22,267 cases;
2. Regarding to children under the age of five, the national stunting rate is 37.2% which consists of 18% for very short dan 19.2% for short (Riskesdas 2013);

3. HIV testing coverage is 14% dan antiretroviral (ARV) therapy coverage is 65.58% (Directorate General of Disease Control and Prevention Ministry of Health, 2015);
4. Tuberculosis (TB) notification rate in 2015 is 73.5% and tuberculosis treatment success rate is 72% (Directorate General of Disease Control and Prevention Ministry of Health, 2015).

Distinguished guests,
Indonesia Health Development Program in 2015-2019 strengths in improving human quality life through Health Indonesia Program with family approach. The Indonesian Ministry of Health issued The Minister of Health Regulation (Permenkes) No. 39 Year 2016 as a Guideline of Implementation of Health Indonesia Program with Family Approach. This program has 12 main indicators as markers of a family health status.
Currently, many health programs have been implemented by Indonesian Ministry of Health, Provincial Health Offices, and District Health Offices. However, many health problems, some as mentioned above, still become health burdens. We may ask a question whether the programs that we conducted have answered the health problems we have in Indonesia.
It would be better if all health programs that we implement based on scientific health research, especially interdisciplinary research. The research should be related to detection, prevention, and treatment of diseases or problem solving for better health.
My dear colleagues,
Being a province with speciality, Special Region of Yogyakarta placed Traditional Medicine as one of the priority programs in Provincial Medium Term Development Plan (2017-2022). We still encounter many challenges in developing Traditional Medicine, especially in providing services which are based on scientific evidence.
Distinguished colleagues,
We look forward to results of interdisciplinary research which would support health problem solving, especially by developing traditional medicine in Yogyakarta. We believe that collaboration in interdisciplinary research would improve quality of human life.
Finally,
Thank you for your attention. We wish you a successful conference.

Wassalamu'alaikum Warahmatullahi Wabarakatuh,

On behalf of
the Head of Provincial Health Office
Special Region of Yogyakarta

Drg. Pembajun Setyaningastutie, M.Kes

SPEAKER OF INTERNATIONAL CONFERENCE

Zahid Iqbal
Al-Nafees Medical College Isra University Islamabad Campus Islamabad, Pakistan
"One Health Program for Public Health Benefit"

Prof. Dr. Abdul Khaliq
Professor, Department of Agronomy, University of Agriculture, Faisalabad
"Role of Agriculture in Poverty Alleviation of Rural Areas"

Fitri Arofati
Universitas Muhammadiyah Yogyakarta, Indonesia
"Continuing Professional Development of Practicing Nurses in Indonesia"

Tri Wahyuliati

Universitas Muhammadiyah Yogyakarta, Indonesia
"Diabetic Neuropathy - A Chance Towards A Better Treatment"

Mohammad Khalid Ashfaq
University of Mississippi, USA
"Natural Products –Use or Misuse"

Muhammad Mukhtar
American University of Ras Al Khaimah, United Arab Emirates
"Emerging Biotechnologies and Genomic Medicines in Human Health and Well-Being"

Muhammad Sasmito Djati
Brawijaya University Malang, Indonesia
"Herbal Medicine a Holistic Approach: in case of food supplement formulation of Sauropusandrogynus and Elephantopusscaberto modulate immune and hormonal system in pregnant Salmonella typhi infected mice"

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SPEAKER OF INTERNATIONAL CONFERENCE

ICMHS-P-1-26

The Difference of Radiological Characteristics between Giant Bullous Emphysematous and Pneumothorax

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Abstract

Background: Giant Bullous Emphysematous (GBE) is developed from bullous lung parenchyma diseases and is resulted from multiple causes. The Images between GBE with pneumothorax are similar and difficult to differentiate.Both are emergency cases that prompt diagnosis might mean proper treatment and life saving.This was a case study presenting a case of a 27-years-old-man to emergency room with dyspnoe. Respiratory rate of 32and coarse upper breath sounds with diminished breath sounds at the right lung. Chest Computed Tomography (Chest CT) and Chest X Ray (CXR) images at right lung has shown a large coalescing bulla which trapped air and fluid, compressed the adjacent lung parenchyma with resultant ipsilateral volume loss, air fluid level and thin walls. Smaller bullous lesions were also seen in the left upper lobe. Results: the difference characteristics between chest CT and CXR GBE compared to pneumothorax were: 1) the location of lesions: GBE was within the lung and pneumothorax was in pleural space; 2). The shape of the lesions: GBE, oval, thin walled-less than 1 mm may be formed by pleura, septa or compressed lung tissue. Pneumothorax: with linear density outlining distinct lucent area with broncho vascular marking 3.) Complications: GBE caused minimal mediastinal shifts line and spontaneous pneumothorax. Pneumothorax with large areas caused greater mediastinal shift line. Conclusions: chest CT and CXR were important to determine between GBE and pneumothorax based on the location, the shape of the lesions and complications.

Keywords: Giant Bullous Emphysematous, pneumothorax, characteristic of lesions, chest x ray, chest ct scan

INTRODUCTION

Giant Bullous Emphysematous (GBE) or Vanishing Lung Syndrome is Bullous lung disease is a spectrum of disease with multiple causes that presence of air in the cavity more than one third of the hemithorax in lung parenchyma. These Giant Bullous develope from centrilobular or paraceptal emphisematous lung with Chronic Obstructivus Pulmonal Diseases (COPD). Clinical symptoms patients maybe asymptomatic or experience hypoxia, severe dyspnea and chest pain.[1,2] These GBE more often seen in young men and in cigarette smokers. However, GBE also been described in non-smokers and patients with immunodefisiensi Syndrome (deficiency of alpha 1-anti protease), smokers, drug abuse injections, sarcoidosis, genetic disorders such as Boccherini or Have Ehlors syndrome and cystic lesions on Lung parenchyme lung Damage.[2,3] The Size of GBE varies from 1 to 20 cm and an average of 2-8 cm, asymmetrical and can be enlarged on the hemithorax. Giant bullae form when adjacent areas of paraseptal emphysema coalesce, and are therefore usually subpleural in distribution. Bullae are described as air-filled spaces exceeding 1cm in size with a wall thickness less than 1mm. It was originally hypothesized that bulla formation was due to a “ball-valve mechanism” in which gas entered the lesion but could not exit. Over time, the bullae would enlarge with subsequent destruction and compression of adjacent lung parenchyma. Newer research, however, suggests there is negative intra-bullous pressure, similar to pleural pressure, and is thus preferentially ventilated during inspiration with loss of elastic recoil preventing air from being expelled. Giant bullae usually form in areas of parenchymal weakness, tends to preferentially affect the upper lobes, is often asymmetric in distribution and often progressive in nature.[1,2,4]

It is limited by the Bullae of lung parenchyme which is a form of fibrous tissue that can form trabekulasi alveolar septal.[3]

Chest X Ray (CXR) of GBE will classically demonstrate a white linier density (pleura) oulining a distinc area of black pleural space where bronchovascular marking are abscent because of these similarities , it can be difficult to differentiate bullae from pneumothorax. Both the case is same emergency and has treatment is very different. The surgical action is indispensable in the case of GBE, is on pneumothorax management with the inserted chest tube to the air so that expenditure can be minimized lung compressed. The accurate diagnosis indispensable due to either GBE or pneumothorax is a case of emergency that need immediate handling to save sufferers to prevent further complications and mortality of patients. The complications of GBE is pneumothorax and CXR can find two abnormal with careful observation. CXR is sometimes less accurate to diagnose this case so that it is necessary to other modality of radiology such as Chest CT and thoraxic ultrasound. The purpose of this case report is to determine the characteristics of CXR and Chest CT scan between GBE compared pneumothorax so that enforcement of the diagnosis and treatment can be done immediately and complications can be minimized.[2,3]

CASE REPORT

A 27 years old man presented to the emergency department of hospital with complaints of chest feels pain, dyspneu, productive cough and low grade fever. He had a history of of smoking about 5 years and emphysema. He seem shortness of breath with sternal and intercostal retractions. Vital sign s upon presentation: blood pressure shows 130/90 mmHg, pulse 90, respiratory rate 32 and temperature 37^0C. Physical examination demonstrated respiratory distress, with coarse upper breath sounds and diminished breath sounds at the bases right lung. auscultation: decreased breath sounds over the right middle and basal lung fields. Tactile fremitus right chest wall is less than the left. Chest X Ray (CXR) demonstrating a large right midle and basal lung bulla with internal layering of fluid (containing an air fluid level), oval shape, thin walls, costofrenikus sinus sharp and right diaphragm is flattened. Bronchovascular marking lung field seems increased and lung parenchyme compressed to medial, minimal mediastinal shift line to contralateral with giant bullous and hyperinflation in both the lung.. Chest CT scan demonstrating extensive lung bullous in right lung with thin-walled-less than 1 mm and luscent centrilobular and paraseptal luscent lesions in left lung field. Tracheal and mediastinal shift to the left and and bronchovascular marking in left lung is increased.

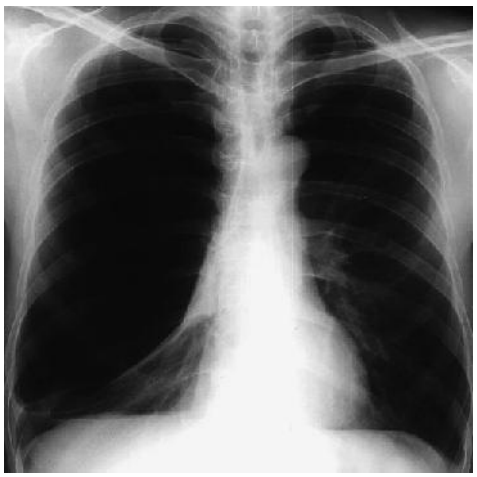

Figure 1

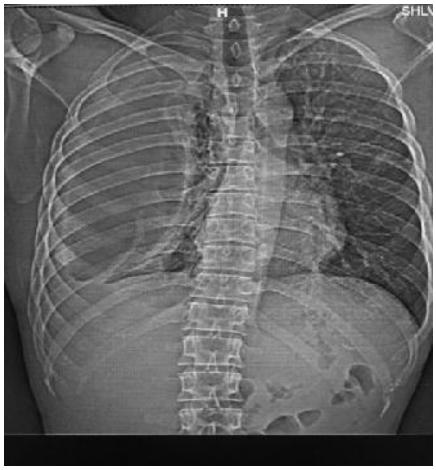

Figure 2

Figure 1 and 2. Chest X Ray : the luscent wide oval shape lesion in right lung with thin-walled, the infiltrate into basal lobe lung (Giant Bullae). Hyperinflasi both the lung, right diaphragm had flattened. Minimal Shift line mediastinal and trakhea to the left

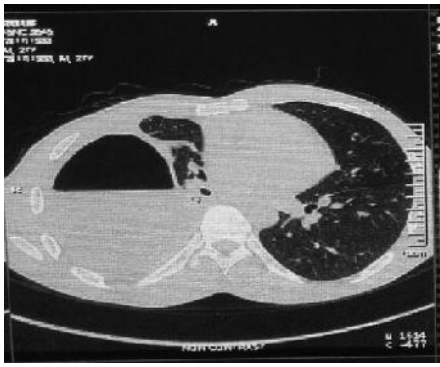

Figure 3

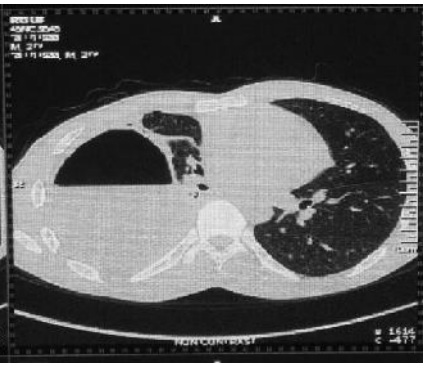

Figure 4

Figure 1. Chest CT Scan: luscent oval shape lesion in right lung containing air fluid level. Compressed lung parenchyme to medial near mediastinal. Luscent lesions, small, thin walls, multiple, limits firmly in left lung. Bronchovascular marking in left lung seem to increase.

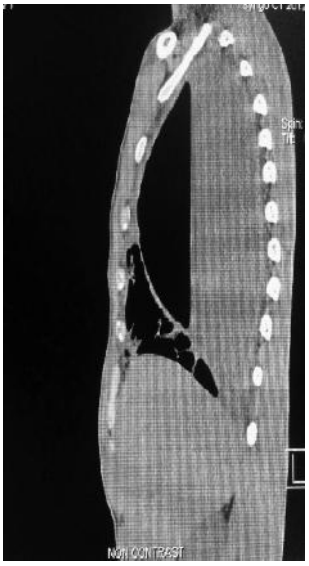

Figure 5

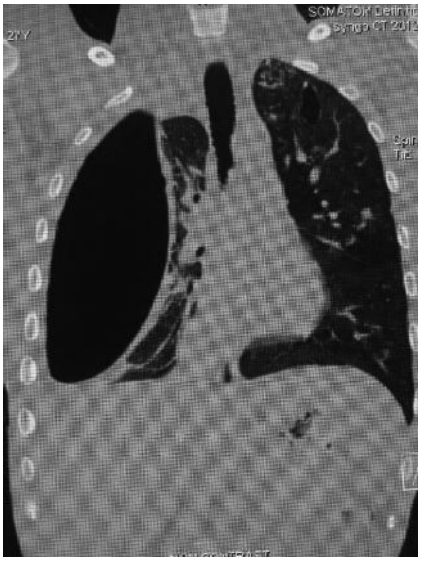

Figure 6

Figure 2. Chest CT Scan: Giant bullae with septal luscent lesions in the anterior of the basal-right lung. The infiltrate in parenchyme basal of the right lung. It seems compressed lung parenchyme to medial with the outlines fibrosis and luscent lesions. Multiple small bullous with diameter average 1-3 cm in the superior lobe (centrilobular and paraseptal) with hyperaerasi in left lung. Trachea and mediastinum is shifting a little to the left. Right diaphragm is flattened.

DISCUSSION

The imaging of Chest X Ray or Chest CT scan between GBE with Pneumothorax very similar. Both are equally contains the air so that it appears luscent lesion that filled spaces that occupy more than one-third of the hemithorax and unbounded firmly. The both of case is an emergency cases requiring immediate diagnosis, because will cause failed breath, due to lung parenchyme compression so hypoxia and respiratory distress which can cause death. The complications can cause permanent destroyed lung parenchyme that can continue to be a tear in the visceral pleura, causing the formation of fistulopleura and become pneumothorax. Giant Bullae can be divided according to Klingman become two type, namely 1). Type 1, Giant Bullae with pulmonary tissue surrounding normal bullae (20% of patients), most the cigarette smoking young age, presence of immunodefisiensi syndrome (deficiency of alpha 1-anti protease) that is characterized by dilatation of the air fill space in parenchyme. The location of the lesions are usually symmetrical in the apex of the both of superior lung lobe. Giant Bullae so-called Vanishing Lung syndrome, Bullous lung disease, pneumopathy or bullous disease of the Primary lung type.[1,2,3.5] 2). Type 2, occurred because a continuation of the existence of chronic pulmonary tissue damage (Emphisematous lung or COPD) which causes dilation of the air space of lung parenchyme (centrilobullar and paraseptal) or a combination of several small luscent lesions in the form of bullae with smaller size can unite to form the air contains luscent lesions with a large size, called the GBE. The characteristis GBE is abnormal lung parenchyme around bullae (centrilobular or paraseptal emphysematous). The incidence GBE with abnormal parenchme is 80% of patients. The location of the lesions are often asymmetrical on ipsilateral hemithorax, occupies the superior lobe is sometimes extended to lung lobe medius.[2.3]

GBE and pneumothorax diagnosis of enforcement is important as initial CXR to give an overview of the condition of the lung and surrounding tissues are useful as screening. Chest X Ray is easy, inexpensive and almost all hospitals have X ray. Chest X Ray weakness its accuracy is less because there is some description of the lesion-covered or not seems a result of superposition. Other modality another is chest CT scan that more better than the CXR. Lesions in the lung field can be seen more clearly because of the thoracic thin section and the pieces can be confirmed in 3 dimensions, i.e., axial, coronal and sagittal. Lesions or bullae or small Pneumothorax can be more visible than the CXR.[3, 5, 6]

There are some diagnosis GBE, is pneumatocele, cavitas, cystic masses, bleb and pneumothorax. This case report, there are several things that distinguish between GBE with pneumothorax. This is important because both have a very similar imaging and is an emergency case that need immediate handling. Characteristics of CXR and chest CT scan on the GBE distinguishes pneumothorax are 1) the location and the type

of lesion: GBE, a cavity containing air due to lung parenchyme air space damage, often in superior lobe and medius are being pneumothorax in the form of air in the pleural cavity, location can be anywhere from part of hemithorax 2). The shape of the lesion: GBE, oval shape, thin walled-less 1 mm can be formed from the pleura of lung parenchyme sections and viscerale on the other side, septal alveolar; pneumothorax: luscent lesions without bronchovascular marking in the pleural space, between parietale and viscerale pleural; 3.) Complications: GBE contralateral mediastinum shifts is minimal, pneumothorax with large areas pose a midline shift of mediastinum is severe until maximal. Lung Parenchyme around the lesion on GBE can be accompanied by damage, but can also be normal. Pneumothorax can cause lung parenchyme collaps (atelectasis) accompanied the withdrawal of fissura. 4). On a flattened of diaphragm accompanied by GBE on the side of the lesion, pneumothorax is not. 5). the difference with GBE with pneumothorax, is a chest tube after placement in the lung parenchyma of GBE not returned expands to fill hemithorax (the image of the lung field narrower post insertion of chest tube), pneumothorax is,lung parenchyme re-inflates to fill hemithorax.[3,4]

Figure 7 Figure 8

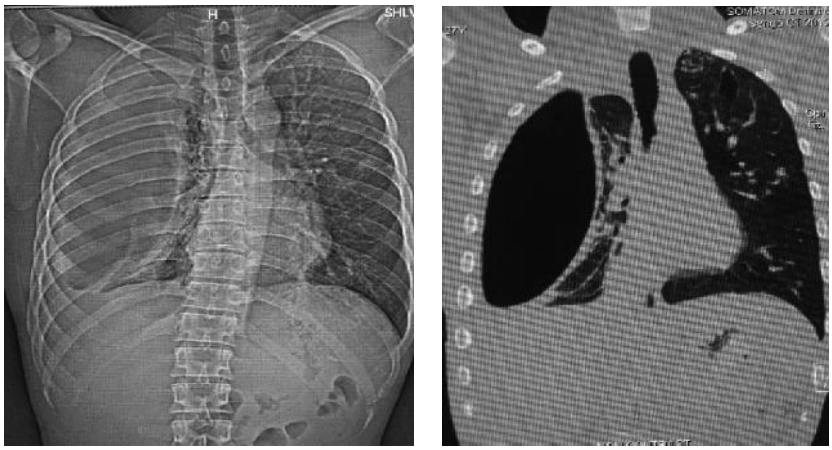

Figure 3. GBE on COPD (type 2), centrilobular emphisematous di pulmo sinistra , asymetric

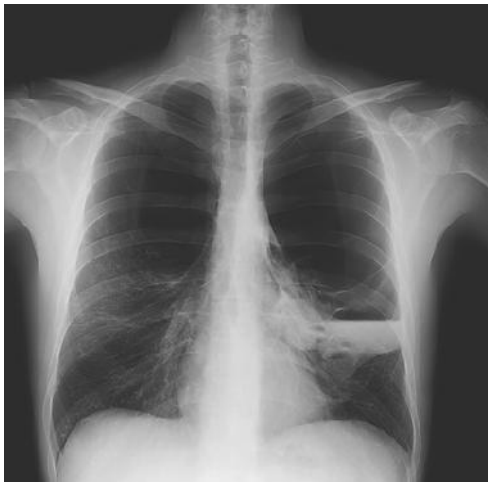

Figure 9

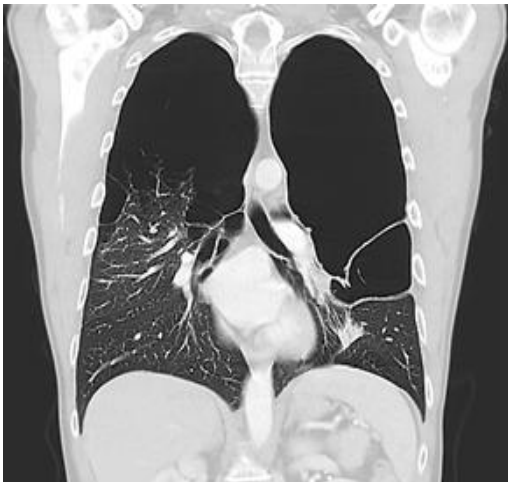

Figure 10

Figure 4. Picture of CXR and CT coronal Giant Chest Bollous on normal lung (type 1).[7]

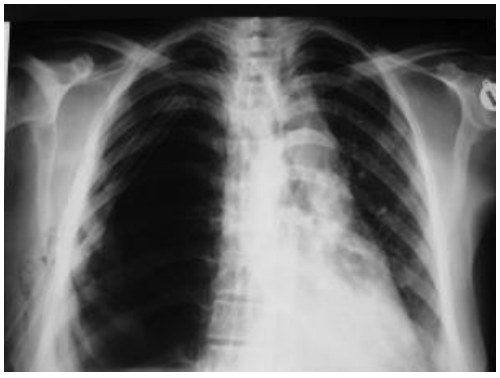

Figure 11

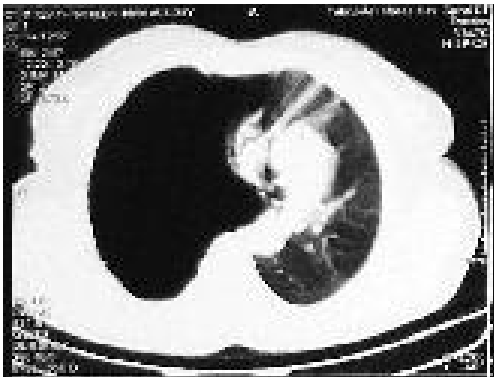

Figure 12

Figure 5. Pneumothorax is luscent area without bronchovascular marking it shows a lung in a right hemithorax push mediastinal and trachea to shift to the left. They Compared with Midline shift on GBE, Pneumothorax greater shift of mediastinual to the contralateral.[8]

The most common complication of GBE is pneumothorax. Chest X Ray difficult to distinguish GBE with complications pneumothorax. The modalities of Chest CT is very helpful to see more clearly the existence of a penumotoraks due to the tearing of the pleural wall limiting viscerale bullae so that air goes into the pleural cavity. Important signs that should be known in the presence of pneumothorax with Chest CT scan on a GBE is a double-wall sign. The surgical indication of action five points in the GBE are, increasing the size of the bullae, pneumothorax, decreased lung function, hemoptysis and bullae are infected.[2,3]

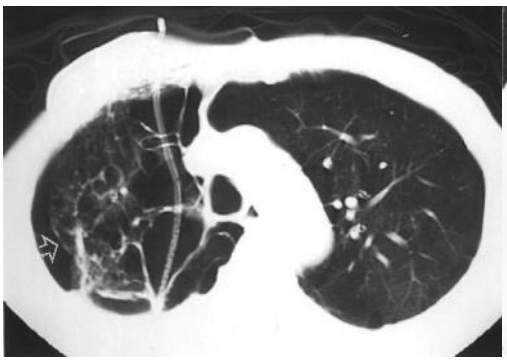

Figure 13

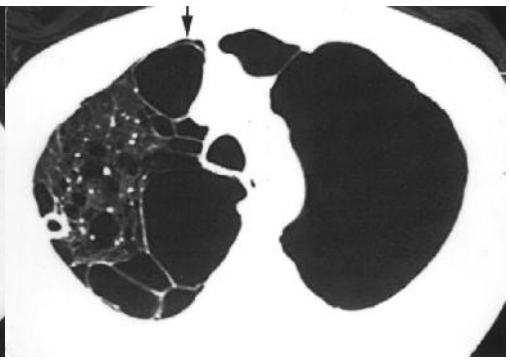

Figure 14

Figure 6. Arrow Showed A Picture of A Double Wall Sign, Which Means on A GBE Complications of Pneumothorax.[9]

CONCLUSION

Chest X Ray and Chest CT Scan is important to determine the diagnosis of GBE with pneumothorax which includes the location and type of lesion, lesions form and complications that occur. Some characteristics radiology of the GBE and pneumothorax to diagnosed are important to know because both are emergency cases that require immediate management.

The management of GBE different with pneumothorax. GBE is surgery performed, lobectomy, thoracotomi. Patients on case report had some clinical symptoms based on the above, the description of the CXR and Chest CT scan diagnosis is type 2 GBE with COPD and therapeutic treatment is toracotomi, lung lobectomy on which there are lesions of the GBE.

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