Post Bullectomy Symptoms – Way Of Understanding The Consequences.

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Introduction.

In this we will study the symptoms of post-bullectomy surgery. The complications and other recurrence will be seen within 7 to 10 days of the surgery. In this paper, we try to understand the actual consequences of the surgery. The severe consequences depend on the severity of the COPD (Chronic Obstructive Pulmonary Disorder) and also the immunity of the patient. Special care and healthcare assignment are required to control COPD. After Bullectomy, the severe consequences are there, but the most common are lung infection, bronchospasm, pulmonary embolism (PE), and the rarest is leakage of the Stappled lungs after Bullectomy. The clostridium bacteria can also be found. That is also the possibility after Bullectomy.

Key Words – Bullectomy, Clostridium Bacteria, Stapled Lungs, COPD, Pulmonary Embolism, Bronchospasm etc.

Bullectomy.

The Bullectomy is a surgical procedure to remove the air packets in the lungs, called bullae that are the causing difficulties in breathing.
Bullae are the air spaces in the lungs that are larger than one centimetre in diameter that can be caused by lung tissue destruction or diseases like emphysema and cancer.

Why do we need Bullectomy?

Bullae can make it hard to breathe by taking up the space in the lungs, putting pressure on them and blocking the airflow. If the bullae rupture, the air can escape into the chest wall, causing the collapse of the lungs (Pneumothorax). A bullae that occupies more than 30% of the Hemi thorax, which is referred to as a giant bullae.

The most common cause of lung bulla is Chronic Obstructive Pulmonary Disease (COPD).

Post Bullectomy Symptoms.

The recurrence rate for Pneumothorax after a Bullectomy can vary depending upon the techniques used and other factors.

Pleurodesis.

Adding the Pleurodesis to the bullectomy can significantly lead to reduce the risk of recurrence. For example, one study found that recurrence rate was 16% for patients who have Bullectomy alone, as compared to 1.9 % for those who have Pleurodesis.

Types of Pleurodesis.

1) Chemical Pleurodesis: - Adding chemical Pleurodesis to the bullectomy can significantly reduce the risk of recurrence.
2) Mechanical by Pleural Abrasion.
3) Talc
4) Tetracycline.
5) Doxycycline.
6) Bleomycin.
7) Providone Iodine

The other procedures that may be used or performed to reduce the risk of recurrence.

Bullae Ligation: - performed when the bullaes are small and few in numbers.

Pleural Cautery: - when origin of the leakage is not clear.

Pulmorrhaphy: - performed when bullae litigation is very difficult to perform.

Pleural Reinforcement: - consider an optional procedure to prevent the recurrence.

The pluerectomy is the type of surgery in which the affected pleural portion is removed. The pluerectomy is indicated for mesothelioma. **The other indicators which are included….**

1) **Pneumothorax.**
2) **Empyema.**
3) **COPD.**
4) **Pleural effusion.**

The complications:-

1) **Difficulties in the breathing.**
2) **Pneumonia.**
3) **Bleeding**
4) **Chest infection.**
5) **Lungs and chest wall drainage.**
6) **Air Leak**
7) **Post Operative Pain.**

Decortication.

This is the procedure in which the medical surgeon removes or isolates the fibrous tissues that have abnormally formed on the surface of the lungs, chest wall or diaphragm.
Benefits: - helpful in lung expansion.
Demerits: - lung infection, lung collapse, air leak in the lungs.

Case Study.

I want to study my Father Case Study in order to investigate post-Bullectomy Symptoms. Recently, my Father Mr. N M Rathore actually passed from **VATS – Bullectomy Surgery.**

The following Symptoms actually observed after the surgery.
The symptoms are as below.

1) Mild Fever
2) Body Pain
3) Inflammation in the Chest.
4) Shortness of Breath
5) Rapid Following of the Pulse Rate. (Sinus Tachycardia Pluse Rate – 142-150 and ventricular tachycardia – 192–198 pulse rate).
6) Sometime Headache.
7) Indigestion
8) Whooping & coughing.
9) Less sightedness.

The other symptoms are as below….
1) Bronchospasm.
2) PE – pulmonary embolism
3) Pneumothorax.

The following medical tests are done….
1) D – Dimer – around 2250 ng/ML (immunoturbidimetric Method). It was positive but it could be recovered.
2) CT – Scan – No Pneumothorax found, and no bullae got ruptured.
3) X – Rays – Sub Cutaneous Emphysema found in this matter. Severe COPD (Chronic Obstructive Pulmonary Disorder).
4) Angiography – No PE found, however D – Dimer was positive
The medications or treatments which are given in this matter.

The bronchodilator is the best treatment for this matter.
1) Epinephrine
2) MgSo4 (Magnesium Sulphate)
3) Foracort etc.

Hydro hydro-pneumothorax is the condition in which the thoracic cavity is filled with both fluid and gas. The placement of the ICD is the ultimate solution in this context.

The Clostridium Welchii bacteria are accountable for the hydro-pneumothorax condition, which is all about pleural space infections caused by gas-forming bacteria.

The hydro-pneumothorax is defined as the presence of both air and fluid within the pleural space. Subcutaneous emphysema happens when the air gets into the tissues under the skin. This most happen in the skin covering the chest or neck, but can also occur in the other parts of the body.

The causes of Subcutaneous Emphysema can often be seen as a smooth bulging of the skin. When a healthcare provider feels (palpates) the skin, it produces an unusual crackling sensation as the gas is pushed through the tissues.

Subcutaneous Emphysema is the rare condition, the Symptoms include…

1) Collapsed lungs.
2) Facial bone fractures.
3) Rupture or tear in the airways.
4) Rupture or tear in the oesophagus.

The condition can happen due to…..

1) Blunt Trauma.
2) Blast Injuries.
3) Breathing in cocaine.
4) Corrosive or chemical burns.
5) Diving injuries.
6) Forceful vomiting.
7) Penetrating Trauma.
8) Pertussis (whooping coughing)
9) Certain medical procedures that insert a tube into the body.

Hospital

Patient's Name : NATHUBHAI M RATHOD
Reg. No. (IP/OP): UHID/ER-300432593
Referred By Dr. : PRANAV MODI
Age, Sex :57/M
Date :23/12/2024

Plain Sitogram of Chest AP Sitting View - Portable:

Clinical details: Left side thoracoscopic bullectomy + pleurodesis for left side emphysematous bulla + pneumothorax on 12/12/2024

Rotation +.

Post op. status.

Lucency is seen in mediastinal shadow.
Minimal to mild left hydropneumothorax noted with left sided ICD in situ.
Soft tissue emphysema is seen in visualized left lower neck and in left thoracic wall.

Few thin fibrotic bands are seen in right upper and mid zones.
Blunting of right CP angle noted. P/O Minimal right pleural effusion / Pleural thickening.
No evidence of pneumothorax is seen on right side.

Heart size appears normal.

Domes of diaphragm appear normal.

Osteopenia noted. Degenerative changes are seen in visualized spine.

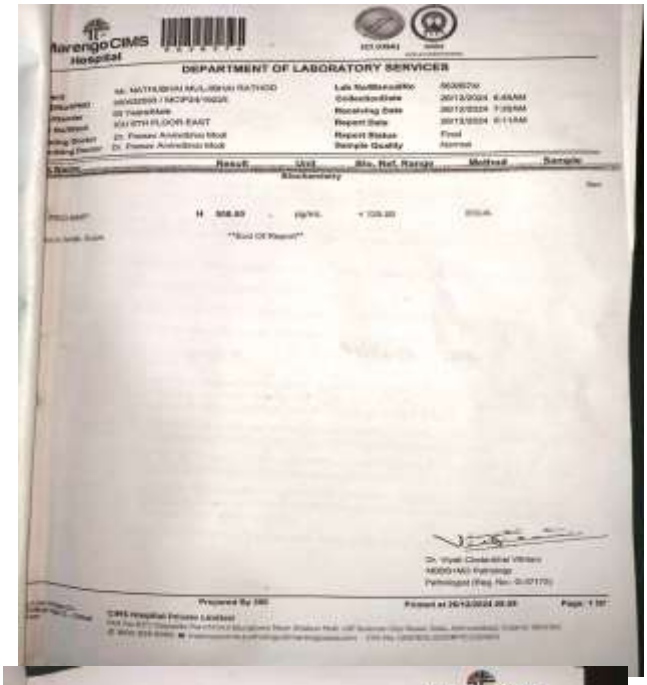
Kindly correlate clinically.

As per Chest X-ray and CT scan, we could derived that Osteopenia is noted and degenerative changes are seen in visualised spine. Few thin fibrotic bands are seen in right upper and mid zones. There was no any evidences of Pneumothorax seen on the right side.

Notes: - 1) Heart size appears normal. 2) Domes of diaphragm appear normal. 3) Osteopenia is noted.

Osteopenia :- 1) Bone Density Loss. 2) It can become osteoporosis if there is the high loss of bone density.

Bone doesn't has much minerals which increase the risk of bone fracture.

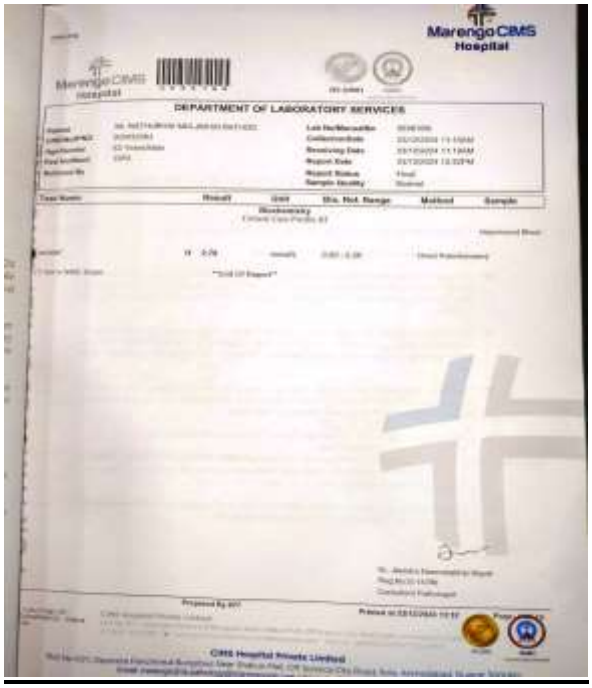


Pro- BNP: - B – Type Natriuretic Peptide Test:- Your heart and blood arteries produce the proteins known as natriuretic peptides. Tests for natriuretic peptides quantify the quantity of these proteins in a blood sample. When a person exhibits symptoms, they are primarily utilized to assist confirm or rule out heart failure.

Test Result: - H 508.00 pg/mL but the normal range is in between 125.00. Its high and peptides is found very high in the blood.

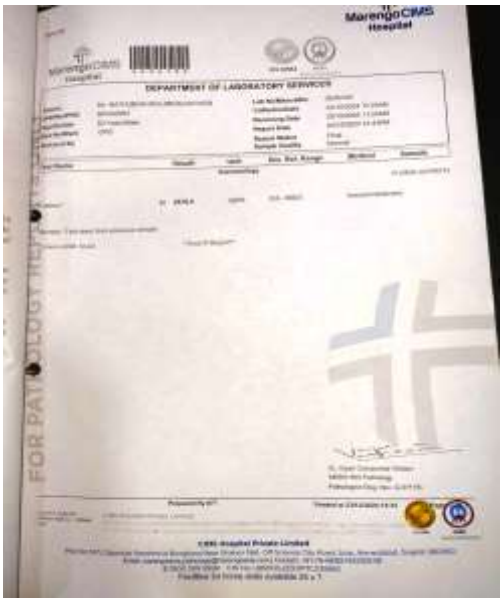
Under 75 years :- less than 125 picograms per millilitre (pg/mL)

75 years or older :- less than 450 pg/mL.



Prothrombin Test : - The Prothrombin test is known as a pro time test, measures how long it takes for a blood sample to clot. The test measures the function of a part of the blood's clotting system. A normal PT result indicates that there is a normal amount of Blood- Clotting protein available.

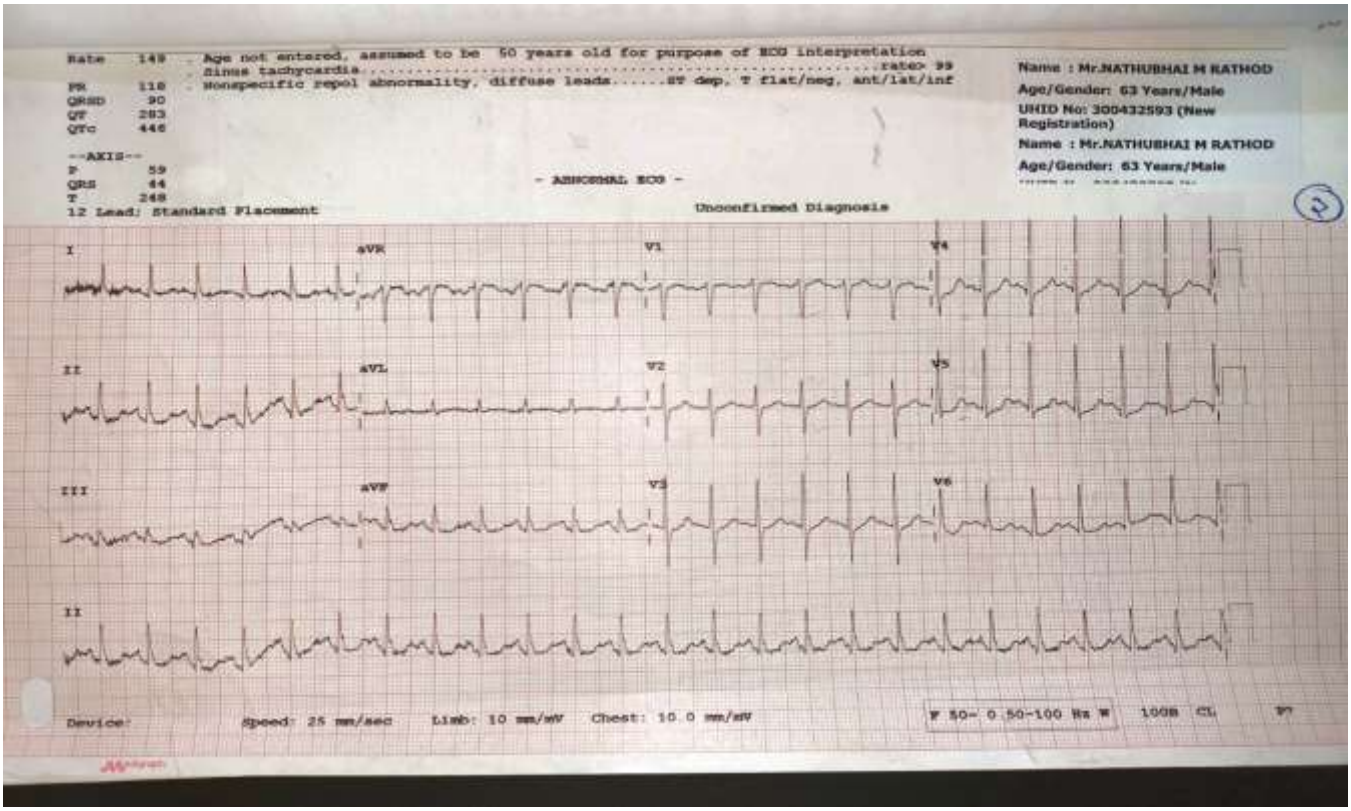
Test Result: - Patient's Blood Plasma test result is 13.8 which is quite high as compare to the normal range of 10.2-12.8.



D- Dimer Test:-

A blood test that measures the amount of D- dimer in clout blood to check for blood clotting problems. D-dimer is a protein that youyr body produces to break down the blood clots. A positive test result indicates that your D-dimer level is higher than normal, which may suggest that you have blood clot or blood clotting disorder.

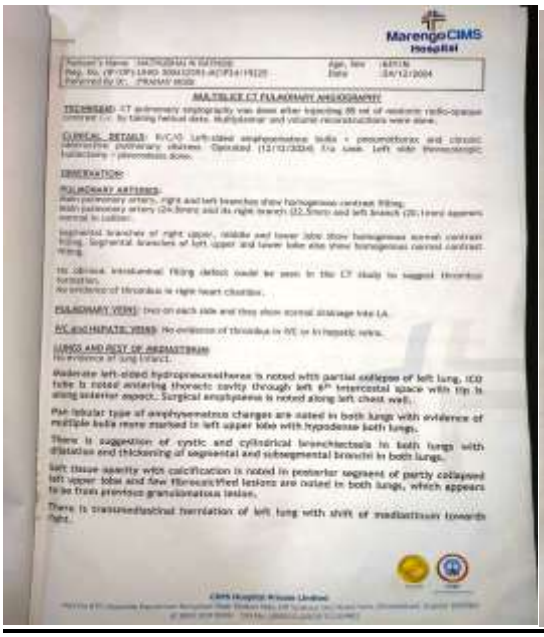
Test Result: - The result is 2378.0 which is very high as compare to normal range 0.0- 500.0 and the method is used immunoturbidimertric.

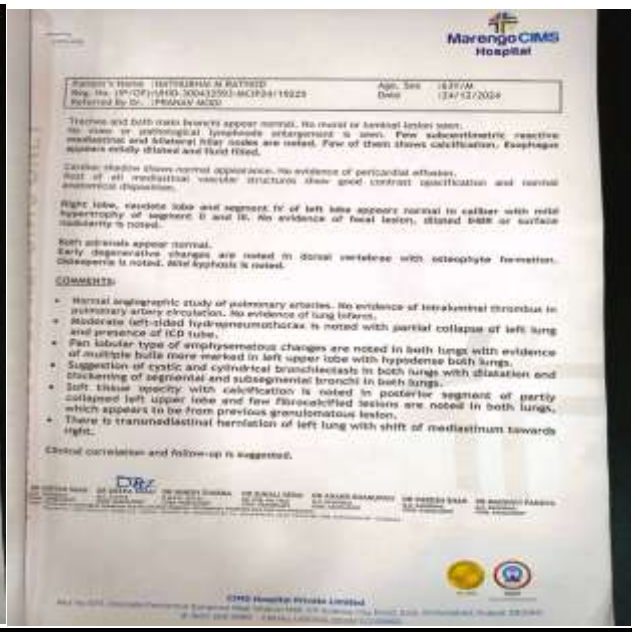


ECG clearly indicated the sinus tachycardia. Abnormal EGC found.

Test Result ;- Rate – 149. PR – 118. QRSD- 90. QT – 283. QTc – 446.

Axis :- P – 59. QRS :- 44. T – 248. 12 Lead : Standard placement.





The results of Angiography and CT scan.

- ⇨ Normal angiography study of pulmonary arteries. No evidence of intraluminal thrombus in pulmonary artery circulation. No evidence of lung infract.
- ⇨ Moderate left sided hydro pneumothorax is noted with partial collapse of left lung and presence of ICD tube.
- ⇨ Pan lobular type emphysematous changes are noted in both lungs with evidence of multiple bulla more marked in left upper lobe with hypodense both lungs.
- ⇨ Suggestion of cystic and cylindrical bronchiectasis in both lungs with dilatation and thickening of segmental and subsegemental bronchi in both lungs.
- ⇨ Soft tissue opacity with calcification is noted in posterior segment of partly collapsed left upper lobe and few fibro calcified lesions are noted in the both lungs, which appears to be from previous granulomatous lesions.
- ⇨ There is Trans-mediastinal herniation of left lung with shift of mediastinum towards right.

Result:-

The results of the above research found that the initial stage of pulmonary embolism and also bronchospasm are observed. There was a blood clot in the blood plasma and severe breathing issues and also sinus tachycardia was observed as per ECG. The osteopenia was observed and in which there was bone density loss. 56-60% of patients noticed the recurrence of pneumothorax post bullectomy.

The following symptoms were noticed after 7- 10 days of the bullectomy….

1. **Shortness of Breath.**
2. **Rapid Pulse Rate – 122-142 (tachycardia)**
3. **Sudden Shortness of the Breath.**
4. **Severe cough and whooping.**
5. **Red – around the chest.**

The initial stage of pulmonary embolism was observed.

Author Opinion.

As per the above research, it could be noticed that most patients notice the recurrence of pneumothorax and other symptoms after bullectomy, but it depends upon the patient's immunity. It is also noticed that the severe collapse of the lungs. In this case, it has been noticed that special care is required, and the COPD patient has to keep a distance from the crowd and communicate less with people. I have a doubt about clostridium bacteria found in the lung's cavity, hence the gas and liquid were generated, but in the test it was not found, but it was the initial stage of pulmonary embolism.

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