Lung Cavities with a Secret: Diagnostic Odyssey of an Elderly Lady

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CLINICAL ASSISTANT
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Particulars of the Patient

Name : Mrs. X
Age : 68 years
Sex : Female
Address : Cumilla
Marital Status : Married
Occupation : Housewife
Religion : Islam
Date of Admission : 25.04.2026
Date of Examination : 26. 04.2026

Chief Complaints

- ✓ Fever for 14 days
- ✓ Cough for same duration
- ✓ Shortness of breath for 2 days

History of Presenting Illness

According to the statement of the patient, she was reasonably well 14 days back .Then she developed fever which was high grade intermittent in nature, highest recorded temperature was 102°F.

Fever was not associated with chills and rigors and relieved by taking paracetamol and there was no history of evening rise of temperature.

She also complaint of cough for the same duration which was persistent and progressively increasing. The cough was productive in nature associated with purulent sputum and not mixed with blood.

Two days prior to her admission, she developed worsening shortness of breath which was gradual in onset, more marked on lying position and relieved after sitting up. It was not associated with any diurnal variation or exposure to dust or fume.

She denied any chest pain, hemoptysis, abdominal pain, vomiting, joint pain, headache, and weight loss.

Her bowel and bladder habits were normal.

Past History

She was normotensive and asthmatic. She was diabetic for 15 years and diagnosed with CKD for 10 years.

Drug History

- Regular Insulin (30%)+Isophane insulin(70%),
- Tab. Linagliptin (5 mg)
- Inhaler Salbutamol
- Inhaler Salmeterol+ Fluticasone

Family History

No history of significant illness in her family .

Personal History

She was non-smoker and non betel nut chewer. She had no known exposure to active TB patient.

Allergic History

She is allergic to dust and she has no known allergies to any food or medication.

Socioeconomic History

She comes from a middle-class family, lives in a well-ventilated house.

General Examination

- Appearance : Ill looking
- Body build : Overweight, BMI : 28.13 kg/m2(Height 1.52m, weight 65kg)
- Co-operation : Co-operative
- Decubitus : On choice
- Anemia : **(+)**
- Cyanosis : Absent
- Jaundice : Absent

- Edema : Absent
- Dehydration : Absent
- Clubbing : Absent
- Koilonychia :Absent
- Leukonychia :Absent
- Bony tenderness : Absent
- Lymph node : Absent

- BP : 130/90 mm of Hg
- Pulse : 110 bpm
- Temperature : 101° F
- Respiratory rate : 22 breaths/min
- Spo2 : 90% in Room air
- JVP : Not raised

Systemic Examination

Respiratory System

Inspection:

- Shape of chest: Normal
- Respiratory rate: 22 breaths/min
- No scar mark/ visible pulsation were present

Palpation:

- Trachea was central in position
- Chest expansibility: Reduced on both side

Percussion:

Dull on the right 4^{th} to 7^{th} ICS anteriorly and Left 7^{th} to 9^{th} ICS anteriorly .

Auscultation:

- Breath sound: Bronchial over the right 4^{th} to 7^{th} ICS anteriorly & left 7^{th} to 9^{th} ICS anteriorly.
-Vocal resonance : Increased over the same area.
-There were no added sounds.

Other Systems

No abnormalities were found.

Provisional Diagnosis

Bilateral Community Acquired Pneumonia with Chronic Kidney Disease with Diabetes Mellitus with Bronchial Asthma

Differential Diagnosis

- ✓ Lung Abscess
- ✓ Bilateral Extensive Pulmonary Tuberculosis

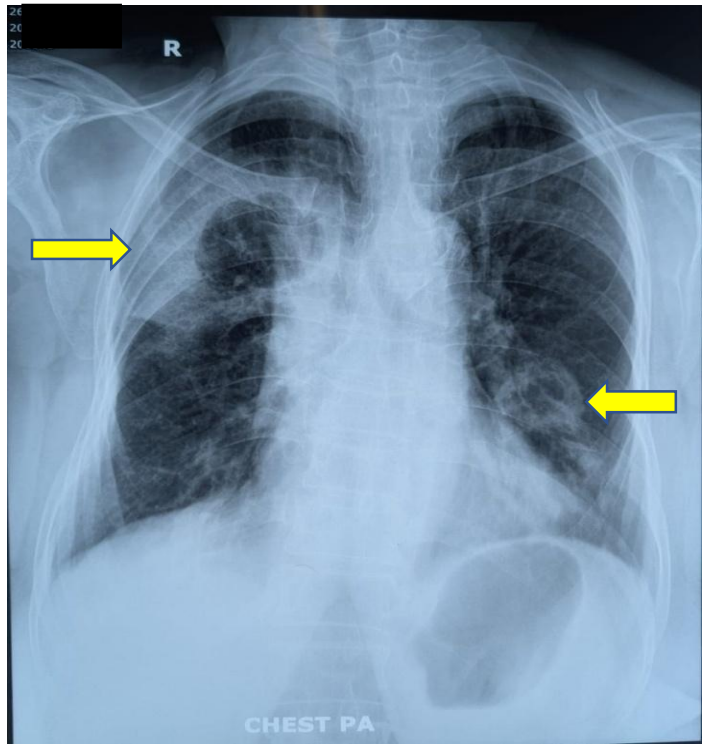
Hospital Course

Investigations

CBC	Result	Reference
Hb%	8.1 gm/dl	F:12-16 gm/dl
White Blood Cell	11.66*10^3uL	4-11*10^3uL
Neutrophil	95%	40-75%
Lymphocytes	3.2%	20-40%
Eosinophil	0.9%	1-6%
MCV	84.9%	78-98%
MCH	28.6pg	27-32pg
MCHC	33.7g/dl	32-36g/dl
Platelet	152*10^3/UL	150-450*10^3u/L

Test	Result	Reference
CRP	293.78mg/L	Upto5mg/L
S. Creatinine	3.83mg/dl	Adult:.0.3-1.5mg/dl
SGPT	53U/L	F:upto 31U/L
Pro- BNP	2263.97pg/ml	Upto 125pg/ml
S. Electrolyte: Sodium Potassium Chloride Bicarbonate	 135mmol/L 5.68mmol/L 99mmol/L 25.7 mmol/L	 135-145mmol/L 3.5-5.1mmol/L 98-107mmol/L 22-23mmol/L

Chest X-ray A/P view(portable)



On the basis of laboratory and radiological findings, her primary diagnosis of Bilateral Necrotizing Pneumonia was made and she was started with Inj. Meropenem at renal dose after sending the sputum for C/S and sputum for Gene X-pert TB.

On the fourth day of admission, the sputum culture and sensitivity (C/S) report revealed the growth of Pseudomonas aeruginosa, sensitive to meropenem.

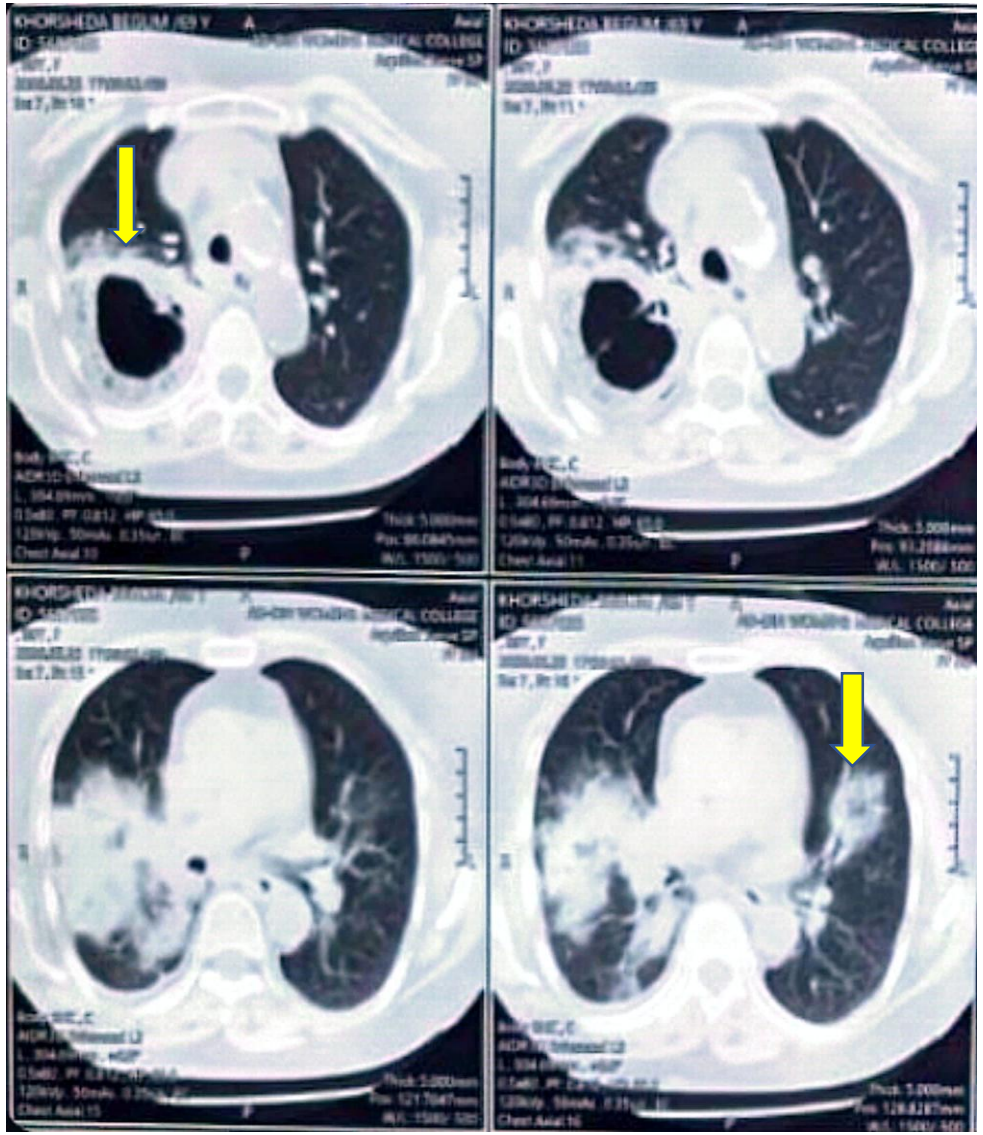
However, her sputum for Gene X-pert for MTB came negative.

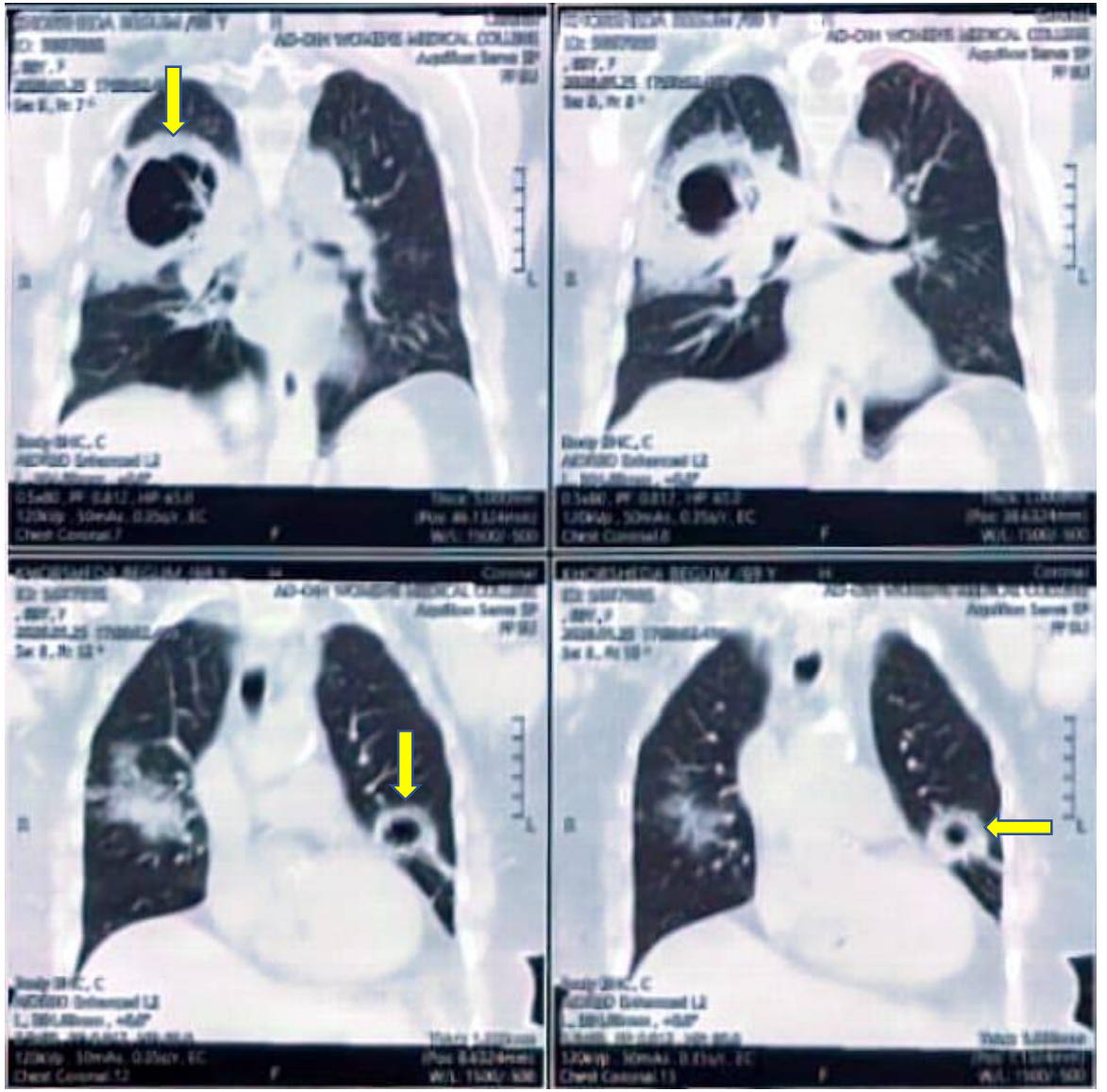
Despite receiving meropenem for 96 hours, she failed to demonstrate any meaningful clinical or radiological improvement, rather her condition deteriorated, with worsening respiratory symptoms.

Therefore, a CT scan of the chest and Echocardiography were subsequently performed to further evaluate the underlying cause. Serum creatinine and CRP were repeated.

Echocardiography failed to demonstrate any occult cardiac disease.

Test	Result	Reference
CRP	183mg/L	<5mg/L
S. Creatinine	5.84gm/dl	Adult: 0.3-1.5gm/dl





As there were multiple thick wall pulmonary cavity on CT scan and patient's underlying immunocompromised state due to CKD & DM along with her progressive deterioration, possibilities of underlying malignancy or fungal infection were suspected.

Sputum was send subsequently for fungal culture and sensitivity while continuing Meropenem with regular renal dose.

Sputum for malignant cell came as negative.

On the 8th day of illness, fungal culture showed growth of Aspergillus Species but AST cannot be performed due to non availability of any recent standard guidelines for the organism.

Our provisional diagnosis was revised as Bilateral Pseudomonal Necrotizing pneumonia with superadded Aspergillus infection in the form of either

- Acute Invasive aspergillosis OR
- Sub acute invasive aspergillosis OR
- Chronic pulmonary aspergillosis OR
- Aspergilloma

As patient was immunosuppressed with no pre-existing cavitary pulmonary lesion, short duration of illness, absence of hemoptysis and non upper lobe predominance as well as with absence of intra-cavitary mass and air crescent sign with little surrounding lung inflammation, all of these lead to the exclusion of aspergilloma .

For further evaluation, Serum Galactomannan and Aspergillus specific IgG antibody were sent to rule out true aspergillus infection from simple aspergillus colonization.

In the mean time Tab Voriconazole was started along with Meropenem. Meropenem was continued for 21 days according to necrotizing pneumonia treatment protocol.

On 21th day of admission results of Serum Galactomannan and Aspergillus specific IgG antibody revealed

Lab No.	: 530546591	**Age**	: 69 Years
Ref By	: PROF DR RICHMOND RONALD GOMES	**Gender**	: Female
Collected	:	**Reported**	:
A/c Status	: P	**Report Status**	: Final
Collected at	: A. H. HEALTHCARE	**Processed at**	: LPL-NATIONAL REFERENCE LAB National Reference laboratory, Block E, Sector 18, Rohini, New Delhi -110085

Test Report

Test Name	Results	Units	Bio. Ref. Interval
GALACTOMANNAN (ASPERGILLUS ANTIGEN) (CLIA)	<0.1000	µg/L	<0.25

Interpretation

Result in µg/L	Remarks	Comments
< 0.25	Negative	Indicates absence of galactomannan in Serum/BAL suggestive of no invasive fungal infection
0.25-0.5	Equivocal	Indicates a suspected invasive fungal infection and requires repeat testing in 10-14 days in Serum/BAL.
> 0.5	Positive	Indicates presence of galactomannan in Serum/BAL suggestive of presence of invasive fungal infection

Note

Dr Lal PathLabs

Regd. Office: Dr Lal PathLabs Ltd, Block-E, Sector-18, Rohini, New Delhi-110085
Web: www.lalpathlabs.com, CIN: L74899DL1995PLC065388

Name	:		
Lab No.	:	Age	: 69 Years
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Test Report

Test Name	Results	Units	Bio. Ref. Interval
ASPERGILLUS ANTIBODIES IGG, SERUM (CLIA)	60.19	U/mL	<40

Interpretation

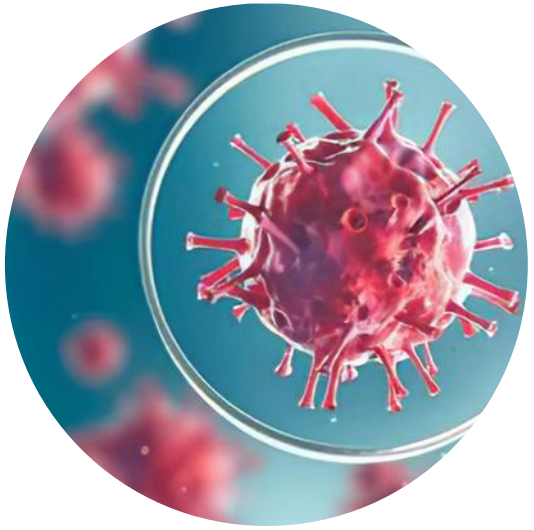
Result in U/ml	Remarks
<40	Negative
≥40	Positive

Absence of neutropenia and radiological halo sign and negative serum galactomannan excluded Acute invasive aspergillosis.

Therefore, On the basis of rapidly worsening clinical course, the presence of ground glass consolidation surrounding the cavitary lesions , absence of peri cavitary fibrosis or pleural thickening, a diagnosis of sub-acute invasive aspergillosis was made excluding Chronic pulmonary aspergillosis.

Final Diagnosis

Bilateral Pseudomonal Necrotizing Pneumonia with Sub-acute Invasive Aspergillosis with Chronic Kidney Disease With Diabetes Mellitus With Bronchial Asthma.



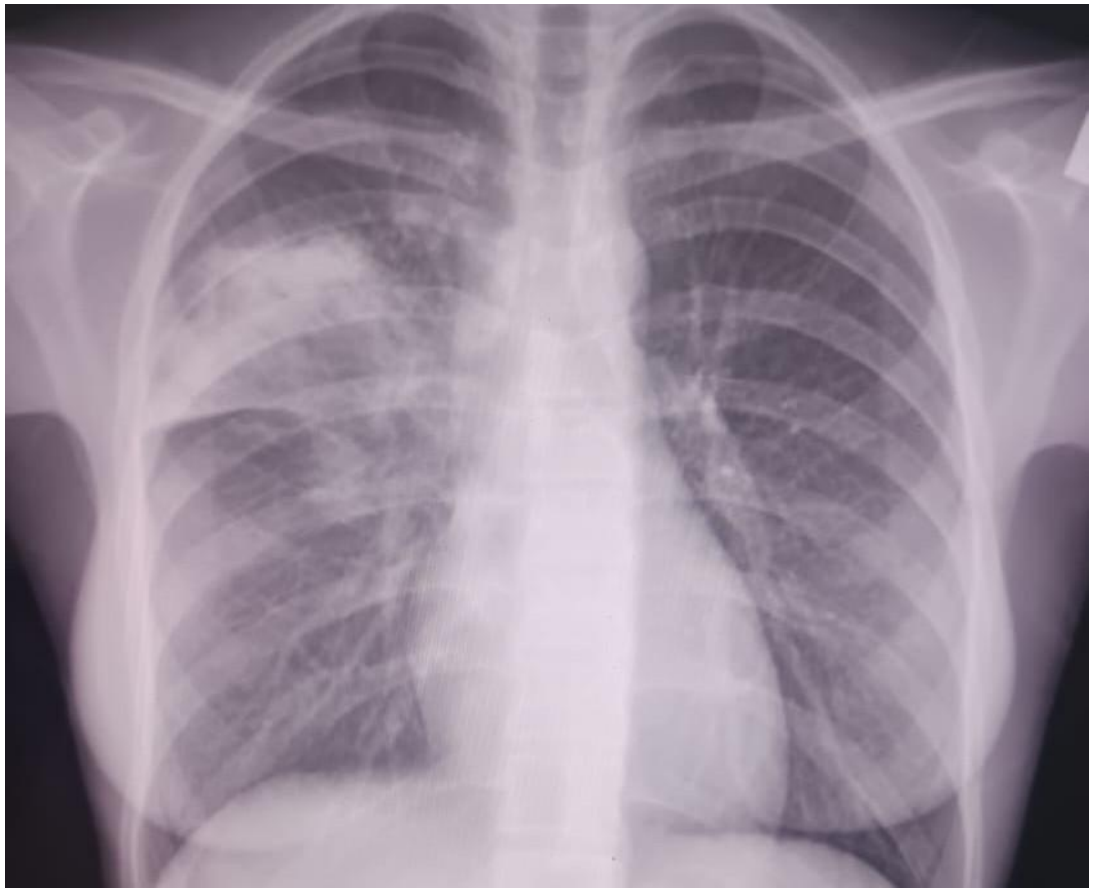
Discharge and Follow up

The patient was discharged with oral voriconazole. She was scheduled for follow-up after one month.

Repeat chest radiography at 1 month demonstrated resolving cavitary lesion changes, while inflammatory markers (CRP) and renal function (serum creatinine) showed significant improvement.

Clinically she had mild cough with no shortness of breath and fever. Glycemic control was satisfactory.

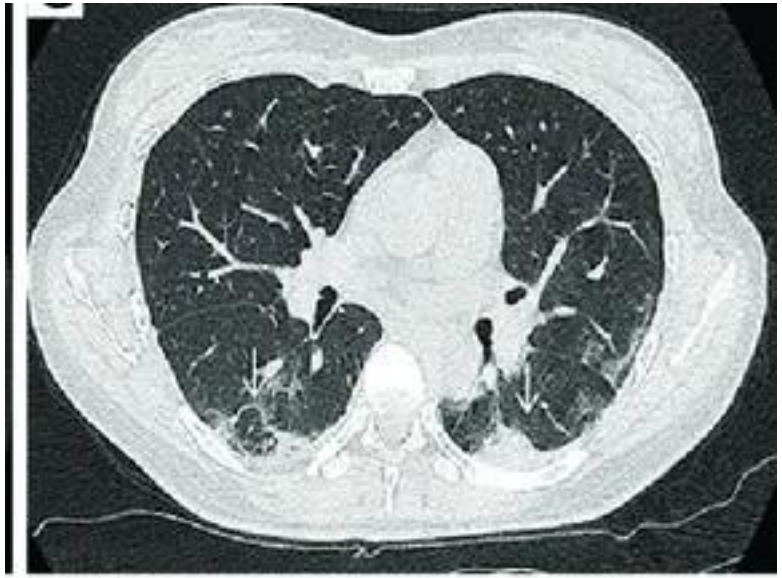
Repeat Chest X-ray



Lab Investigations

- S. Creatinine: 2.83 mg/dl
- CRP: 75.2 mg/L

CT Chest at 3 months



Lab Investigations

- S. Creatinine: 2.67 mg/dl
- CRP: 25.7 mg/L

There is plan to continue voriconazole for 6 months.


Thank You