

CASE REPORT

SEPTIC PULMONARY EMBOLI FOLLOWING MRSA- STAPHYLOCOCCUS ABSCESS IN A HEALTHY YOUNG FEMALE

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ABSTRACT:

Introduction: It is very hard to differentially differentiate such cases and to reach the final diagnosis. It is necessary to find out the site/source from where the bacteria spread in blood. A 30-year-old female was admitted in medical was with a high-grade fever, cough and dyspnea. On clinical examination she was a thin lady with respiratory rate of 28/min, fully conscious, well oriented in time and space. Auscultation of chest revealed crepitations bilaterally in the middle and lower zone. JVP was not raised. Rest of systemic examination was unremarkable except a huge abscess on left thigh with discharging sinuses. The blood culture report isolated MRSA-positive Staphylococcus Aureus. The patient was switched to sensitive antimicrobial agents which were given intra venously for six weeks. Oxygen therapy was maintained for 2 weeks. The patient started improving clinically after 7 days of the treatment and continued improvement until fully recovered. In septicemia and septic emboli, prompt diagnosis can play a crucial role in the survival of the patient.

Keywords: abscess, blood culture, granulomatous disease, MRSA- Staphylococcus Aureus, septic pulmonary embolus

INTRODUCTION

In very rare situations there is hematogenous spread of bacteria. The pathogens settle in various organs and patient becomes critically ill and presents with toxic condition with varying various presentations.¹ It is very hard to differentially differentiate such cases and to reach the final diagnosis. It is necessary to find out the site/source from where the bacteria spread in blood. Later these bacteria become the infected thrombi, and spread as emboli through arterial circulation. These emboli then are settled in different organs as lungs, kidneys and heart. Bacteremia is a condition in which bacteria enter in the blood stream of the patient through any source. While, septicemia is a condition in which these circulating bacteria start replicating in the blood stream thus accelerating the seriousness of the patient's condition.^{2,3} The worst part is that it is fa-

tal especially in elderly and immunocompromised patients. Usually, it is commonly associated with infective endocarditis of the right side, infections of soft tissues, skin, intravenous drug abusers and catheterized patients.⁴ However, it can also be seen in previously healthy individuals. Studies show that the most notorious bacteria are MRSA-Staphylococcus.¹ This pathogen has the ability to produce hyaluronidase enzyme, which breaks the hyaluronic acid in the extracellular matrix of connective tissue and so easily spread throughout the body tissues. It thus causes metastatic and hematogenous infections along with systemic bacterial infection. If it is diagnosed at the earliest, it can save the life of the patient.^{5,6}

Case History

A 30-year-old female was admitted in medical was with a high-grade fever, cough and dyspnea. On clinical examination she was a thin lady with respiratory rate of 28/min, fully conscious, well oriented

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in time and space. On clinical examination, no cyanosis, or clubbing was found. The vitals were normal. Auscultation of chest revealed crepitations bilaterally in the middle and lower zone. JVP was not raised. Rest of systemic examination was unremarkable except a huge abscess on left thigh with discharging sinuses. figure1. There were no other co-existing medical diseases as diabetes, HIV infection hypertension or addiction. For the abscess she had been taking local treatment for three weeks.

A chest X-ray was performed, which revealed multiple pulmonary cavities, with differential diagnosis septic emboli of the lungs. Figure 2. The chest imaging gave rise to three different diagnoses; septic lung lesions, granulomatous disease (pulmonary tuberculosis, Wegener's granulomatosis).

Further workup was done to confirm diagnosis. Blood culture and biopsy of the skin lesion for histopathological evaluation were immediately sent to laboratory.

As the patient was toxic, dyspneic and developing oxygen desaturation, so the first line triple antibiotic regime was started before the results of blood culture were obtained. The broad-spectrum antibiotics which were administered to the patient intra venously provided coverage against streptococci, staphylococci and atypical infectious agents. The response to this initial treatment was suboptimal. Histopathological examination revealed reactive epithelial hyperplasia with underlying acute on chronic inflammation in dermis and necrotic debris. No granulomatous or neoplastic process was seen under microscope Figure 3. The blood culture report isolated MRSA-positive Staphylococcus Figure 4. The patient was switched to sensitive antimicrobial agents which were given intra venously for six weeks. Ox-

ygen therapy was maintained for 2 weeks. The patient started improving clinically after 7 days of the treatment and continued improvement until fully recovered.

DISCUSSION

The most serious complication of MRSA- Staphylococcus Aureus is its hematogenous spread to the lungs via emboli dislodged from infective thrombi in various parts of the body. Our patient was young and healthy without any comorbidities, as diabetes mellitus, AIDS etc. This proves that septic emboli in lungs can also occur in healthy individuals. Positive blood culture proved the presence of MRSA- Staphylococcus Aureus infection. A similar case was seen in another setting. And the treatment was same too.³ On the other hand, the microscopic picture of the biopsy of skin tissue from thigh by the histopathologist ruled out the presence of any granulomatous disease or metastasis. Bilateral shadows on X rays proved that there were multiple cavitory lesions. In another study different antibiotics were given as per the blood culture sensitivity report.⁵ There was high grade fever which also proved bacterial infection without any response to local treatment. As the reserve of lungs has reduced there was dyspnea and needed oxygen therapy. The prolonged intravenous injectable antibiotics which were found sensitive on blood in the microbiological laboratory, improved the clinical condition of the patient gradually over a period of 6 weeks As the organism was detected at the earliest so the proper treatment remained successful. Same was proved in another⁶ study comparable to ours.

CONCLUSION

In septicemia and septic emboli, prompt diagnosis can play a crucial role in the survival of the patient.



Bahawal Victoria Hospital, Bahawalpur

Department of Pathology

MRN: 684/2637541
 Name: [Redacted]
 Contact No: 30 [Redacted]
 Age/ Gender: 52 [Redacted] Male

Department: IPD
 Request Date: 06/Feb/2026 - 12:24 PM
 Print Date: 11/Feb/2026 - 12:13 PM
 Report Date: 11/Feb/2026 - 12:00 AM

Microbiology Report

Blood For Culture and Sensitivity

Report Type: Final
 Specimen: Blood C/S
 Appearance:
 Color:
 Specimen Comments:

Smear Reports

Method: Gram Stain
 Note:

Parameter	Result Value	Unit
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Culture Report

Culture Timing: 5 DAYS
 Remarks: Growth found
 Organism Class: Gram Positive Cocci
 Organism Name: Staphylococcus aureus
 Notes: MRSA

Antibiotic	Organism Sensitivity
	Staphylococcus aureus
CHLORAMPHENICOL	S
CO-TRIMAXAZOLE	S
LINEZOLID	S
MOXIFLOXACIN	S
CLINDAMYCIN	S
VANCOMYCIN	S
ERYTHROMYCIN	R
CLARITHROMYCIN	R
AZITHROMYCIN	R
LEVOFLOXACIN	R
CIPROFLOXACIN	R
CEFOXITIN	R
PENCILLIN	R



Bahawal Victoria Hospital, Bahawalpur

Department of Pathology

MRN: 684/2637541
 Name: [Redacted]
 Contact No: 30 [Redacted]
 Age/ Gender: [Redacted] Female

Department: IPD Ward : Medical I
 F/H's Name:
 Request Date: 04/Feb/2026 - 08:24 PM
 Printed Date: 11/Feb/2026 - 01:25 PM

Histopathology

Clinical History::

High grade fever 02-week, Cough with sputum, pus draining sinuses.

Biopsy Number::

684/26

Site of Specimen::

Gluteal abscess. Debridement done.

Gross Examination::

The specimen is received in a single container in weak formalin. The tissue requisition slip and the container are both labeled with the patient's name and histology number. The specimen consists of two irregular unoriented tissue pieces with skin attached, measuring 3.5 cm x 3.0 cm x 1.0 cm. Sectioning show grey white cut surface. Random sections of specimen are submitted in three blocks.

Microscopic Examination::

Section show reactive epithelial hyperplasia with underlying acute on chronic inflammation in dermis and necrotic debris. No granulomatous or neoplastic process is seen

Diagnosis::

GLUTEAL ABSCESS, DEBRIDEMENT:

- Consistent with abscess.

- No neoplastic process is seen.



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