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Case Report

A rare presentation of melioidosis; rotator cuff pyomyositis with pneumonia

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Introduction

Burkholderia pseudomallei is known to cause a wide spectrum of disease. This ranges from asymptomatic infection to deep seated abscesses, pneumonia and disseminated disease[1], [2], [3]. Melioidosis is endemic across tropical areas, especially in southeast Asia and northern Australia[1].

Case presentation

A 36-year-old, married, mother of two children, diagnosed in 2016 with systemic lupus erythematosus (SLE) with class IV nephritis, on prednisolone, hydroxychloroquine (HCQ) and mycophenolate mofetil (MMF) with poor adherence to therapy and multiple flare-ups and diabetes mellitus since 2018, presented with excruciating right shoulder girdle pain for one week and shortness of breath for three days.

There was no fever, chest pain, cough or haemoptysis. Shoulder pain was exacerbated on both active and passive movements. Her right-side shoulder and upper back were swollen and tender. She was dyspnoeic and tachypnoeic.

Table 1: Summary of investigations

WBC	12,150/µL → 6,600/µL → 20,020/µL
Neutrophils	90.8%
Lymphocytes	6.8%
Hb	12.2 g/dL
MCV	82.3 fL
Platelet	195,000µ/L
Blood picture	Left shift with toxic changes compatible with bacterial infection/inflammation
CRP	351 mg/L
ESR	78 mm/1st hour
UFR	Pus cells-4, RBC- 3, Protein- 1+
Liver function tests	ALT- 64 U/L, AST- 45 U/L, ALP 196 U/L, Total protein- 5.2 g/dl, Albumin- 2.2 g/dl, Globulin- 3 g/dl, GGT- 112 U/L, Total Bilirubin- 8.7 µmol/L, Direct Bilirubin- 3.2 µmol/L
INR	0.96
LDH	356 U/L
CPK	235.8 U/L
ECG	Sinus tachycardia, Q waves in inferior leads
Renal function tests	Creatinine- 70µmol/L, Urea-39 mg/dl
2D ECHO	EF>60%
US Abdomen	No organomegaly and no deep-seated abscess
CTPA	No pulmonary embolism
Pleural fluid report	Milky colour, protein- 2500mg/dL, PMN- field full, Lymphocyte and RBC- 0
US of right shoulder	Heterogenous echoic particles seen within muscular plane 1. Haematoma 2. Abscess
MRI right shoulder	Marked enlargement of the subscapularis, infraspinatus, and teres major muscle. There are multiple loculated intramuscular fluid collections in the muscles.
Abscess fluid	Turbid, PMN- 120,000/mm^3
Blood culture	*B.pseudomallei*
Urine culture	No growth
Pus culture	*B.pseudomallei*
Pleural fluid culture	*B.pseudomallei*
Sputum MTB Gene/Xpert	Negative

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The lung signs were consistent with left side consolidation and effusion. *B. pseudomallei* was isolated from the blood culture. Chest X-ray showed a left side pleural effusion. Ultrasound scan of the right shoulder girdle revealed heterogenous echoic particles seen within the muscular plane. MRI of right shoulder findings were of severe myositis with intramuscular abscess formation, in keeping with pyomyositis (Figure). Ultrasound guided aspiration was done. The pus culture was positive for *B. pseudomallei.*

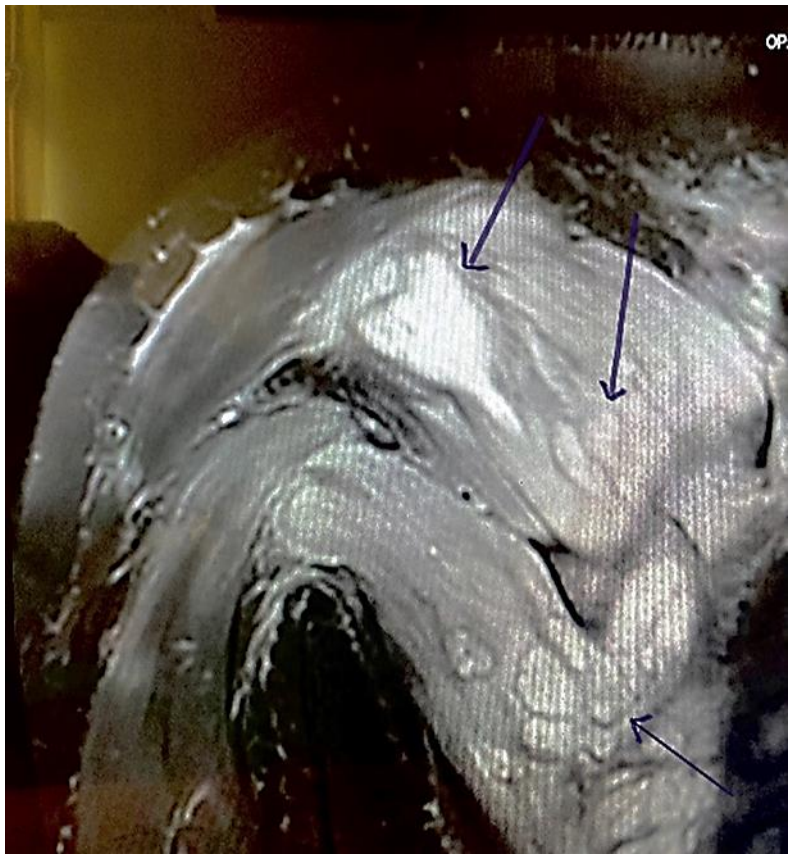

Figure: MRI of Shoulder muscles showing abscess

Follow-up and outcomes

Intravenous meropenem was given for 28 days. Patient was discharged on oral doxycycline 100mg 12 hourly and cotrimoxazole 960mg 12 hourly which is not standard therapy, due to her immunocompromised state.

Discussion

Melioidosis, caused by *B. pseudomallei*, presents variably, from mild infection to fatal sepsis[1]. Pyomyositis is a rare manifestation, seen particularly in immunocompromised individuals[2]. This case highlights an unusual presentation of melioidosis involving rotator cuff pyomyositis with pneumonia.

Our patient, a 36-year-old woman with poorly controlled SLE and diabetes, presented with severe shoulder pain with restricted mobility and respiratory distress. Her immunosuppressed state probably increased susceptibility to infections. Blood tests revealed a neutrophilic leukocytosis and high inflammatory markers. Imaging confirmed pulmonary and musculoskeletal involvement, with *B. pseudomallei* isolated from blood and pus cultures.

Musculoskeletal melioidosis is uncommon, typically affecting the lower limbs. Rotator cuff involvement with concurrent pneumonia is exceedingly rare. As melioidosis can mimic tuberculosis or bacterial pneumonia, microbiological confirmation is crucial for targeted therapy.

Conclusion

This case illustrates an unusual manifestation of melioidosis, presenting as rotator cuff pyomyositis with concurrent pneumonia in a young woman with systemic lupus erythematosus and diabetes mellitus. The coexistence of musculoskeletal and pulmonary involvement in an immunocompromised host highlights the protean nature of melioidosis. This case emphasizes that clinicians should maintain a high index of suspicion for melioidosis, particularly among immunosuppressed patients as timely diagnosis and appropriate therapy can be lifesaving. This potentially fatal disease is treatable and is potentially preventable thus, the country must plan suitable community health strategies [4].

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