Treatment Resistant Polyarticular Mycobacterium Intracellulare Infection Masquerading as Recurrent Inflammatory Arthritis in a patient with Myelodysplastic Syndrome on Systemic Immunosuppression

Dr. Dumindu Katupitiya

Department of Plastic and Reconstructive Surgery, Nepean Hospital, Sydney, Australia

Introduction

A significant challenge of managing immunocompromised patients arises from the atypical presentation and/or natural history of infective pathology in this cohort.

While the challenges of correctly diagnosing such pathology can be mitigated by experience for clinicians familiar with such patients, such as immunologists and infective diseases specialists – the challenge can remain significant for consulting surgical specialties.

This case, in which a recurrent polyarthropathy alerted a diagnosis of infective rather than inflammatory pathology, demonstrates the value of having a broad range of differential diagnoses for immunocompromised patients, particularly where surgical intervention may be indicated.

Aim

To describe a case of treatment resistant polyarticular mycobacterium intracellulare masquerading as migrating, inflammatory arthritis in a patient with myelodysplastic syndrome (MDS) on systemic immunosuppression.

Methods

A retrospective review of this patient's electronic chart and associated imaging was performed.

Results

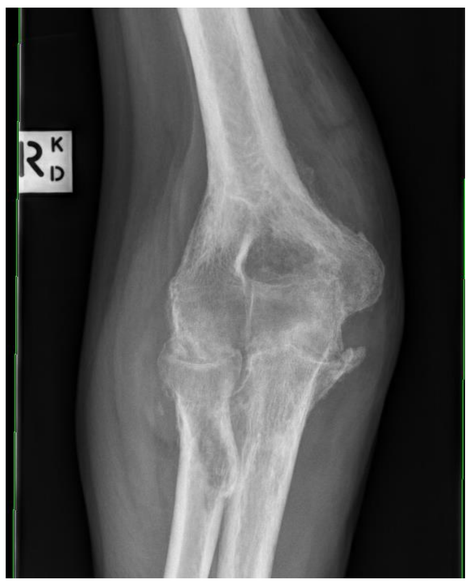
A 54yo male patient with known MDS being managed for multiple flares of asymptomatic vesiculobullous skin eruptions with concurrent debilitating polyarthropathy presented with six months of worsening arthralgic symptoms in his right elbow which were unresponsive to oral systemic immunosuppression (previously effective). Immunosuppressive agents at presentation included Hydroxychloroquine 400mg daily, Prednisolone 75mg daily, Mycophenalate Mofetil 1.5g BD and Sulfasalazine.

MRI confirmed septic arthritis and osteomyelitis of the right distal humerus and proximal radius/ulnar. Aspiration of the joint yielded Mycobacterium intracellulare on PCR, blood cultures were negative and bone marrow biopsy showed no evidence of MAC infection. The patient was commenced on Azithromycin 500 mg PO daily, ethambutol 800 mg PO daily, rifabutin 300 mg PO daily and immunosuppression was weaned.

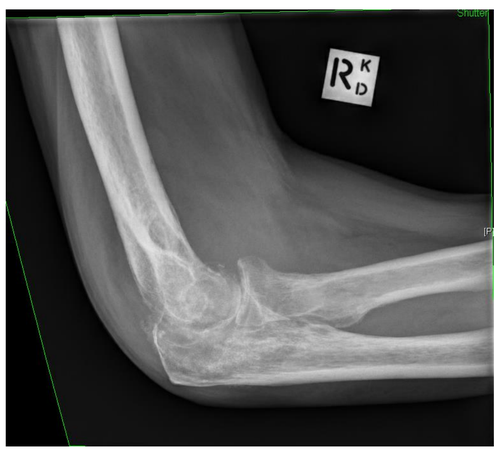
At six weeks the patient's elbow was worsening so moxifloxacin 400mg PO daily was added to his regime. At twelve weeks the patient had significantly worsened. He was admitted and underwent formal washout and debridement of the septic right elbow joint. Post operatively the patient suffered recurrent bleeding from the wound, sepsis, a NSTEMI and new AF necessitating ICU admission and ionotropic support before optimisation and eventual discharge.

Three months post debridement the patients elbow wound had not healed and continued to discharge. Recurrent inflammation of the metacarpal-phalangeal joints and wrists were present. The patient underwent a second debridement of the elbow where a sinus to the joint was excised and frank pus was drained. Synovial fluid from the fingers and wrists yeilded positive results for Mycobacterium intracellulare. Sensitivities showed very high MIC to many first- and second-line drugs. Special access to bedaquiline was sought and was added to rifambutin and clarithromycin.

Two years post-initial presentation the patient's elbow wound is healed and widespread arthralgia symptoms minimally improved. Goals of therapy currently are keeping bacterial load low and optimizing quality of life.



Plain films of the patients affected elbow demonstrate osteomyelitis on a background of osteoarthritis



Plain films of the patients affected elbow demonstrate osteomyelitis on a background of osteoarthritis

Conclusions

Mycobacterium Intracellulare and other MAC-type infections should be considered in patients on long term systemic immunosuppression when arthropathies remain unresponsive or worsen on immunosuppressive treatment. Once diagnosed, these infections require aggressive treatment with multiple anti-MAC agents for extended periods and despite this still possess a high risk of treatment failure resulting in significant morbidity or even mortality in the host.

Acknowledgements

Department of Haematology, Nepean Hospital, Sydney Australia

Department of Infectious diseases, Nepean Hospital, Sydney Australia

Department of Orthopaedics, Nepean Hospital, Sydney Australia

21st ICHS Symposium on Infections in the Immunocompromised Host