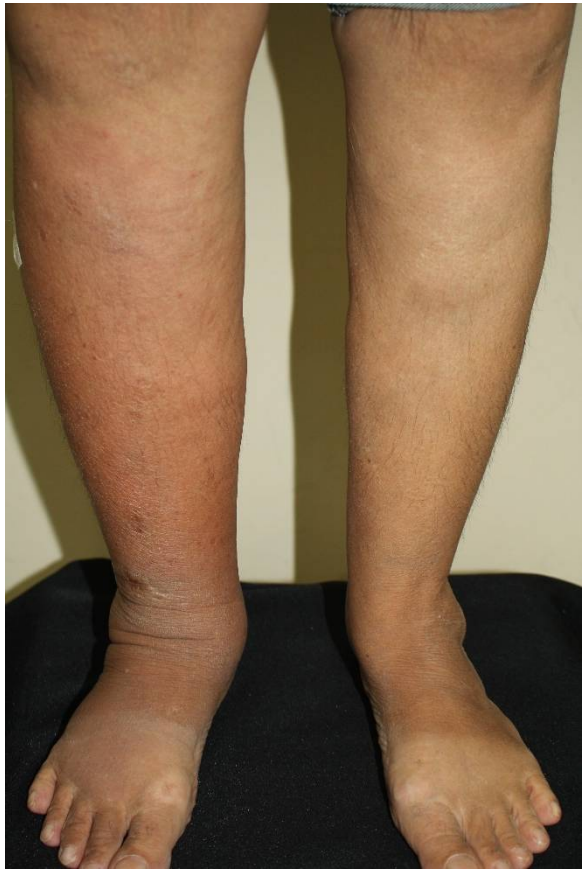
Case 5

A 54 year-old Thai woman from Nonthaburi

Chief complaint: Erythematous plaque on right lower leg for 2 weeks



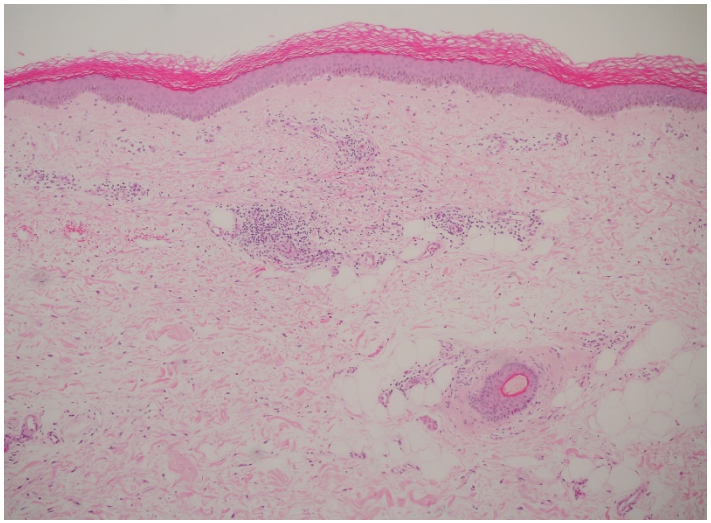
Present illness: The patient with end-stage kidney disease secondary to IgA nephropathy, underwent decreased donor kidney transplantation seventeen years ago. She received immunosuppressive drugs for maintenance therapy with mycophenolate mofetil, cyclosporine, and oral prednisolone. In January 2015, she presented with multiple scattered erythematous plaques on face, trunk, and extremities. Incisional biopsy was done and histopathology revealed diffuse inflammatory cell infiltration in the dermis, including neutrophils, lymphocytes, and histiocytes forming granuloma, with positive acid fast bacilli. Polymerase chain reaction (PCR) confirmed the presence of mycobacterium other than tuberculosis. Tissue culture identified *Mycobacterium haemophilum*. Additionally, rhinoscopy was performed, and biopsy was done from inferior nasal turbinate, which presented numerous acid fast bacilli. She was treated with twelve-month course of oral clarithromycin plus ciprofloxacin, with substantial improvement. Five months after cessation of therapy, she developed swelling erythematous plaques on her right lower leg. She was trialled on a two-week course of oral amoxicillin/clavulanic acid without improvement.

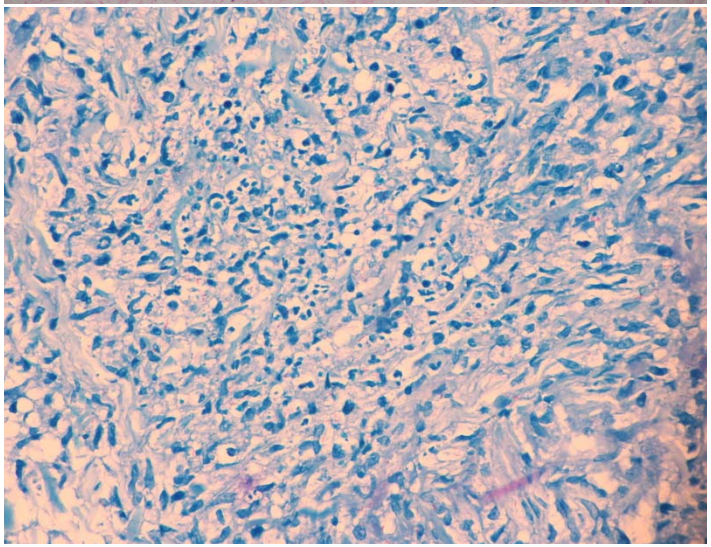
Past history: diabetes mellitus and hypertension.

Skin examination: Large ill-defined erythematous, slightly edematous plaque on right lower leg, no tenderness.

Physical examination:

Rhinoscopy showed marked swelling of right inferior turbinate with crusts totally occluded the nasal cavity, mild swelling of left inferior turbinate without mass. Other systemic examination revealed no abnormality.





Histopathology: (S16-018659, right lower leg)

- Perivascular and interstitial inflammatory-cell infiltrate composed of lymphocytes, histiocytes admixed with a few neutrophils and extravasated erythrocytes in the upper and mid dermis.
- Fite stain demonstrate some mycobacteria in the dermis.
- Right inferior turbinate: epithelioid granuloma

Investigations:

- Skin tissue: PCR for mycobacteria was negative. Tissue culture is pending.
- Right inferior turbinate: PCR for mycobacteria was positive for mycobacterium other than tuberculosis.
- Tissue culture is pending.

Diagnosis: Recurrent nontuberculous mycobacterial infection

Treatment:

- Clarithromycin(250mg) 1 tab po bid pc
- Ciprofloxacin(250mg) 1 tab po bid pc

Presenter: Kulsupa Nimmannitya, MD
Consultant: Poonkiat Suchonwanit, MD

Discussion:

Mycobacterium haemophilum is a nonchromogenic, slow-growing organism first identified in 1978.[1,2] It was mainly affected immunocompromised patients and healthy children.[3] Nevertheless, a few case reports and series of *Mycobacterium haemophilum*

infection in immunocompetent adults have been published.[3] It caused a wide range of clinical presentation including skin and soft-tissue infections, pulmonary infections, lymphadenitis, and frequently bone and joint infections.[4] A reported case of *Mycobacterium haemophilum* presented atypically with intra-nasal lesions and subsequent disease relapsed at a new anatomical site with skin and presumably synovial involvement.[1] Skin lesions vary from nodules, papules, plaques, cysts to tender discharging ulcers.[1,5] Hsiao reported a case of *Mycobacterium hemophilum* infection infected after a scratch injury on her lower leg and the lesions progressed to cellulitis and arthritis.[2] Our patient also demonstrated plaque or cellulitis-like lesion, which non-tuberculosis mycobacterium infection should be considered due to her immunocompromised status together with history of recent diagnosis of *Mycobacterium haemophilum* infection.

Laboratory identification of *Mycobacterium haemophilum* needs special culture techniques and media. It is an aerobic fastidious organism that grows best at 30–32 ^{o}C and cultures on iron-supplemented media.[6,7] To obtain the optimal detection of *Mycobacterium haemophilum*, the investigations include acid fast staining, culturing with iron-supplemented media and molecular detection using PCR.[1,3]

Histopathology is similar to other mycobacterial infections, typically with necrotizing granulomatous inflammation which might not be apparent on histological specimens of immunocompromised hosts due to impaired inflammatory responses, like our patient. Hsiao described histological manifestations of 58 patients with skin and soft tissue infection caused by non-tuberculous mycobacteria.[2] Four types of granuloma were found in this study. None of these granulomas was species-specific, and different type of granuloma could be present in the same specimen. Rheumatoid granuloma was reported in 14/58 patients. Suppurative granuloma was seen in 17/58 patients and sarcoidal granuloma was seen in 6/58 patients. Finally, caseating granuloma was observed in 5/58 patients. A study from Lebanon also demonstrated histological findings of 19 biopsies corresponding to 17 patients with non-tuberculous mycobacterium infection.[5] Suppurative granuloma was commonly present (47%). Tuberculoid, sarcoidal, palisading and interstitial granuloma were 30%, 11%, 11% and 5% respectively. In our patient, histopathology revealed palisading granuloma, which could be found as described above.

There are currently no treatment guidelines for *Mycobacterium haemophilum* infections.[4] Experts generally agree with some combination of clarithromycin, ciprofloxacin, and one of the rifamycins.[3] Life-threatening disease, or disease not responsive to an oral regimen, could warrant addition of intravenous amikacin.[6] Treatment duration has been suggested from twelve to twenty four months, depending on patients. To the greatest results, immune function should be maximised, either by lowering immunosuppression or reconstituting the immune system.[6]

References

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