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Peroneal osteomyelitis by *Mycobacterium haemophilum* in a person living with HIV

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Background

Infections caused by non tuberculous mycobacteria (NTM) still represent a diagnostic and therapeutic challenge in people living with HIV, especially if immunocompromised.
Mycobacterium haemophilum is one of the most common non tuberculous mycobacteria causing osteomyelitis in individuals with impaired cell-mediated immunity, in particular with HIV. Due to its fastidious growth requirements (lower incubation temperature and iron supplementation) infections caused by *M. haemophilum* may be underdiagnosed and more prevalent than previously reported.

Clinical Case

A 45-year-old Thai woman was hospitalised in Infectious Diseases Unit of University Hospital of Modena for pneumonia. She revealed to have had diagnosis of HIV infection in South Africa 10 years earlier during pregnancy; she self-suspended antiretroviral therapy (ART) since 8 years when she moved from South Africa to Italy.

At hospitalization, HIV RNA was 91.7014 copies/ml and CD4 were 21 cells/mmc(3%). Pulmonary tuberculosis and other opportunistic infections were excluded; she started ART with BIC/TAF/FTC, PJ prophylaxis with TMP/SMX and treatment with valganciclovir for CMV reactivation.

At 4-week follow-up (FU) in Outpatient Clinic, she complaint swelling of the left lateral ankle, painful, slightly erythematous and warm (Figure 1). Ultrasonography revealed hypoechoic spherical collection of about 4 x 3 cm with poorly defined borders.

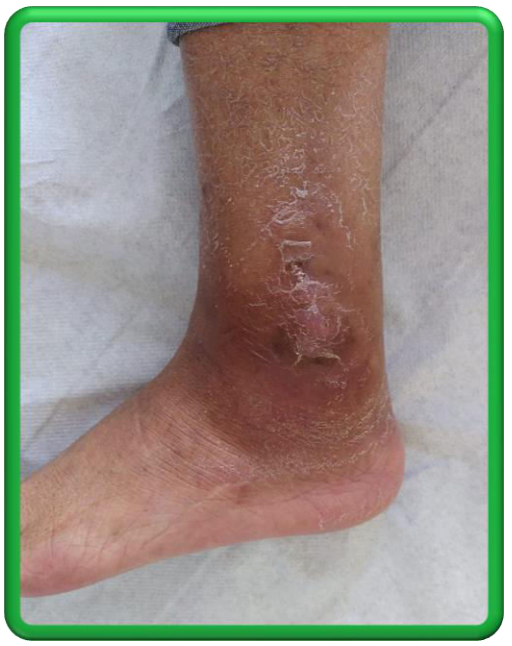

Figure 1. Clinical presentation of the left ankle

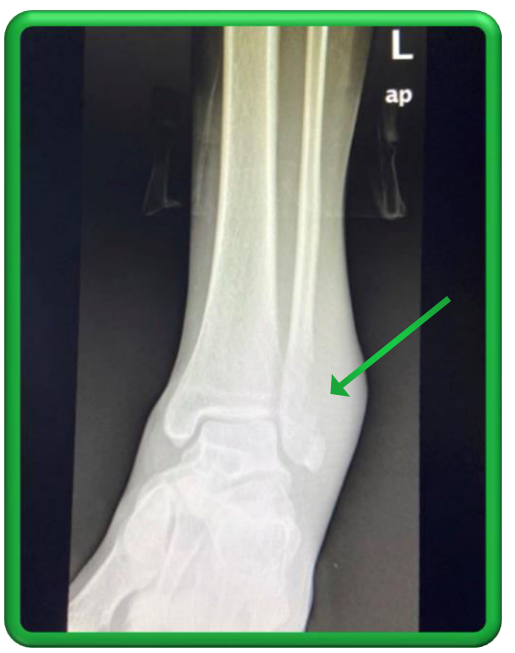

Figure 2. Peroneal superficial osteolytic area of the left ankle, suspected for osteomyelitis

At X-ray there was a peroneal superficial osteolytic area, suspected for osteomyelitis (Figure 2). Needle aspiration was performed with drainage of hemato-purulent fluid: negative bacterial culture, positive microscopic examination for acid-fast bacilli with Ziehl Neelsen stain, negative *M. tuberculosis* PCR. 16s rRNA Gene Sequence Analysis was performed, resulting positive *for Mycobacterium haemophilum*. Mycobacterial culture was unfortunately negative and no antimicogram was available.

Treatment with azithromycin 500mg, moxifloxacin 400mg and rifampicin 600mg was started, switching ART to DTG bid + TAF/FTC due to drug interactions. The patient returned to Thailand twice for 3-month period, assuring therapy compliance without any side effects.
No alterations of liver function nor QT prolongation were detected during the follow up period. At last visit, HIV RNA was 25 copies/ml and CD4 were 145 cell/mmc(55%). The treatment was continued for 12 months with completely resolution of the swelling and pain and reduction of the osteolytic area at FU X-ray.

Conclusions

Mycobacterium haemophilum is recognized as the most common non-tuberculous mycobacteria causing osteomyelitis in patients with impaired cell-mediated immunity, in particular HIV/AIDS. Diagnosis could be challenging: it is important to obtain a prompt diagnosis even with more invasive approach. The use of genotypic sequencing could be extremely useful if first level exams are inconclusive. Treatment is not standardised: in general, a 2 or 3-drug regimen is suggested according to severity of infection and susceptibility test, if available, with a variable duration from 6 to more than 12 months, if tolerated and checking interactions with ART. The decision to use secondary prophylaxis until immune restoration is controversial.
In this case, the infection was indolent and rapidly diagnosed, the treatment was prolonged and characterised by significant pill burden that luckily did not impact patient's adherence. Secondary prophylaxis was not chosen but clinical follow up should be warrant.

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