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Acute cardiac insufficiency in HIV: a jump into the past

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Background

AIDS late presenters' management still represents a challenge for HIV clinicians, who need to consider not only the impact of opportunistic infectious per se, but also the effect of immune disregulation guided by HIV infection itself.
An example of this statement is HIV-related cardiomyopathy, whose pathophysiology is multifactorial including: HIV infection of the myocardium with or without myocarditis, coinfection with other viruses, opportunistic infections and nutritional disorders.

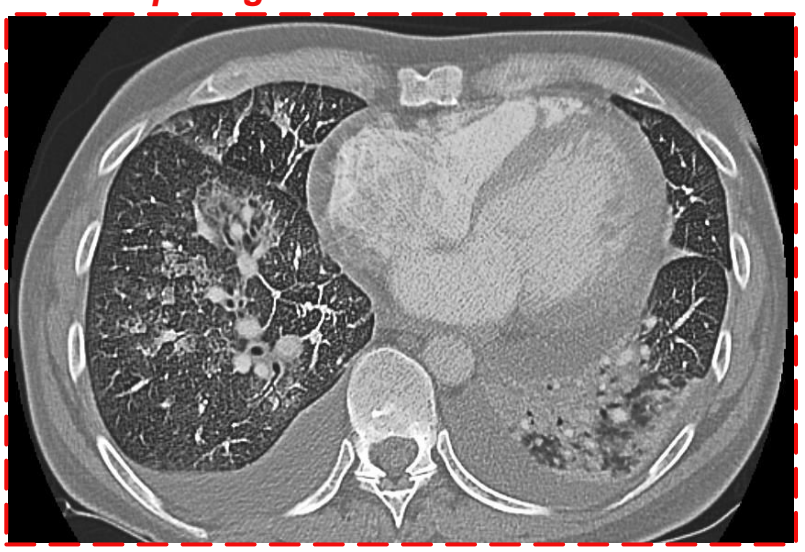
Case presentation

A 42-year old Italian woman (active smoker without any known comorbidity) presented with confusion, complaining profuse vomiting, fever and mild headache for the last two months.

- Leukopenia, mild thrombocytopenia, anaemia and elevated C-reactive protein.
- Negative CT scan, lumbar puncture showing clear cerebrospinal fluid (CSF) with abnormal cell count, protein levels, hypoglycorrhachia, and lactate. Empiric treatment for meningoencephalitis was started.
- On CSF: **positive Cryptococcus neoformans PCR, later confirmed by cultural examination**. Thereafter, **HIV test resulted positive.** Antifungal treatment was started with liposomal amphotericin B 10 mg/kg once (total dose 700mg), combined with fluconazole 1200mg/die and flucytosine 25mg/kg q6h, without any toxicity. At baseline: **HIV RNA >10 million copies/ml and CD4 50 cells/mmc (18.6%)**. Considering meningitis, antiretroviral therapy (ART) was started on day 10.
- Day 12: respiratory distress with CT scan showing extensive ground glass consolidations on right inferior lobe. Microbiological exams from respiratory tract were essentially negative (including P.jirovecii): empiric broad spectrum antibiotic therapy was started with progressive improvement. After 15 days of ART, HIV RNA decreased and CSF alteration slightly improved.

Day 33: palpitations and severe respiratory crisis requiring intubation

- ECG: aspecific alterations
- CT scan: no pulmonary embolism, pleural and pericardial effusion (2 cm), multiple bilateral consolidations
- **Echocardiogram: left ventricular dysfunction without dilatation (Ejection Fraction 20%) and severe mitral/tricuspid insufficiency without valvopathy**
- **Endomyocardial biopsy: interstitial oedema, myocardial fibrosis and mild morphologic changes at histological exam, not conclusive for myocarditis**
- Cardiac MRI: EF 35% and subepicardial/transmural late gadolinium enhancement
- Coronary imaging excluded ischemic aetiology



Inotropic support and diuretics were started with benefit: patient was later discharged with partial cardiac function recovery (EF45%) and no neurologic sequelae, continuing fluconazole as maintenance therapy for cryptococcosis.

Discussion

The severe immunodepression and inflammation induced by cryptococcus and AIDS could contribute to cardiac impairment. Despite not meeting all the defining criteria for myocarditis diagnosis, the severe ventricular insufficiency observed in this patient strongly suggests HIV-associated cardiomyopathy (HIVAC). Both cryptococcosis and HIVAC are now rare in high income countries thanks to ART. Nevertheless, clinicians should remain vigilant due to the rise of late-presenting AIDS cases.

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