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Trismus and voice change after starting tuberculosis treatment

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A 29-year-old man with perinatally-acquired human immunodeficiency virus (HIV) and newly diagnosed disseminated tuberculosis on treatment presented one month after restarting antiretroviral therapy (ART) with fevers, nasal obstruction, and change in voice. He was born in Malawi and moved to the United States at 10-years old with no additional travel outside the country. His HIV was well-controlled until he lost his job and health insurance at the start of the COVID-19 pandemic. Subsequently, he developed bilateral, upper lobe pneumonia with sputum culture growing *Mycobacterium tuberculosis.* He was treated for two-months with anti-mycobacterials prior to restarting ART.

On presentation to the National Institutes of Health, informed consent was obtained, and he enrolled on clinical trial NCT02147405. He was febrile with bilateral cervical lymphadenopathy and unable to fully open his mouth due to trismus. Laboratory studies revealed a CRP 117.8 mg/L, CD4+ T cell count 126 cells/mcL and a four log HIV viral load reduction since starting ART. Positron emission tomography (PET) scan demonstrated multiple fluid collections with peripheral uptake of FDG consistent with inflamed necrotic lymph nodes (Fig. 1A and B). Blood, sputum, and lymph node aspirate cultures were negative. Prednisone was initiated for immune reconstitution inflammatory syndrome (IRIS), but follow-up computed tomography (CT) showed no appreciable decrease in the size of the necrotic lymph nodes (Fig. 1C). He underwent multiple incision and drainage procedures and his nasal obstruction and voice changes subsequently improved with markedly decreased size of the cervical lymph nodes (Fig. 1D). Acid fast staining consistently showed heavy organism burden, but all mycobacterial cultures remained negative at six-weeks. After five-months of prednisone with anti-mycobacterial therapy, his inflammatory symptoms resolved.

Tuberculosis-IRIS can cause lymph node necrosis throughout the body and may involve unique locations [1]. Despite heavy burden of mycobacteria on acid-fast staining, no viable organisms were isolated, highlighting this inflammatory process is antigen driven and does not require replicating pathogens [2]. When large necrotic lymph nodes are present, incision and drainage can be safely performed to decrease antigen burden. Treatment otherwise consists primarily of steroids while continuing anti-mycobacterials and ART until inflammatory symptoms improve [1]. Infliximab has also been used successfully to control IRIS-related inflammation in refractory cases [3].

CRediT authorship contribution statement

Joseph M. Rocco: Conceptualization, Writing – original draft. **Dima A. Hammoud:** Visualization, Writing – review & editing. **Clint T. Allen:** Investigation, Writing – review & editing. **Frances Galindo:** Project administration, Writing – review & editing. **Elizabeth Laidlaw:** Investigation, Writing – review & editing. **Irini Sereti:** Conceptualization, Supervision, Writing – review & editing.

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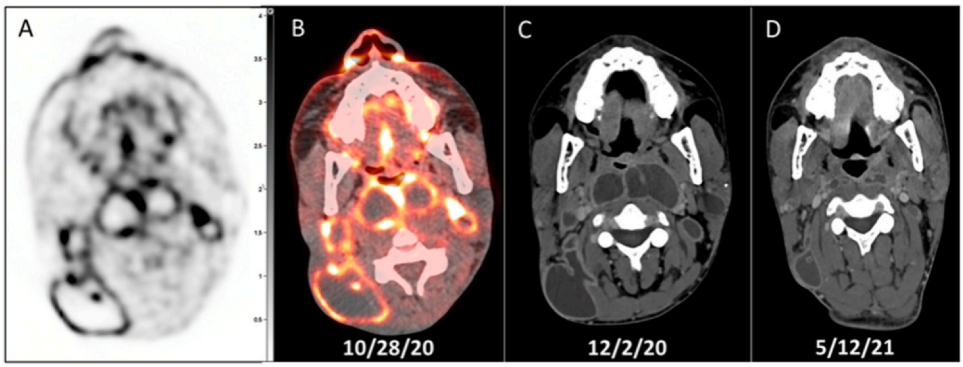

Fig. 1. FDG PET/CT scan at presentation demonstrates increased FDG-uptake along the borders of multiple large fluid collections, likely necrotic lymph nodes, in multiple neck spaces (A, B). Steroids were started for tuberculosis immune reconstitution inflammatory syndrome at this time. Despite one-month of prednisone and anti-mycobacterials, trismus and nasal voice change persisted. A follow-up CT scan showed no appreciable shrinkage of the necrotic cervical lymph nodes (C). Multiple incision and drainage procedures were then performed while continuing steroids which led to symptomatic improvement. Follow-up CT scan at that point showed significant decrease in size of the necrotic cervical lymph nodes (D).

Ethics Approval: Informed consent was obtained

This study was approved by the National Institutes of Health Institutional Review Board, IRB number: 20I0111

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Conflicts of interest

All authors declare no conflicts of interest.

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