

# All That's Purulent is Not Staph: A Case of Extrapulmonary Tuberculosis in an Adolescent Refugee

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## Introduction

Tuberculosis is the second leading infectious disease-related cause of death worldwide, second only to HIV. Ninety-five percent of tuberculosis-related deaths occur in low and middle income countries. In the US, the overall incidence of tuberculosis is much lower, with only 3 cases per 100,000 persons. However, the incidence is 13 times higher in foreign-born persons. Children under 18 years old comprise 7% of all tuberculosis cases reported annually in the United States, one third of which present to a healthcare provider with extrapulmonary symptoms. Our case is of a 16 year old Somali refugee who presented to the emergency room for chronically draining right sided neck wounds eventually diagnosed with single-drug resistant *Mycobacterium Tuberculosis*. This case highlights the need for a high degree of clinical suspicion for tuberculosis infections, especially in at-risk populations such as refugees, for timely diagnosis, as well as the need for a more stringent pre-immigration medical screening process.

## Standard Immigration Medical Screening

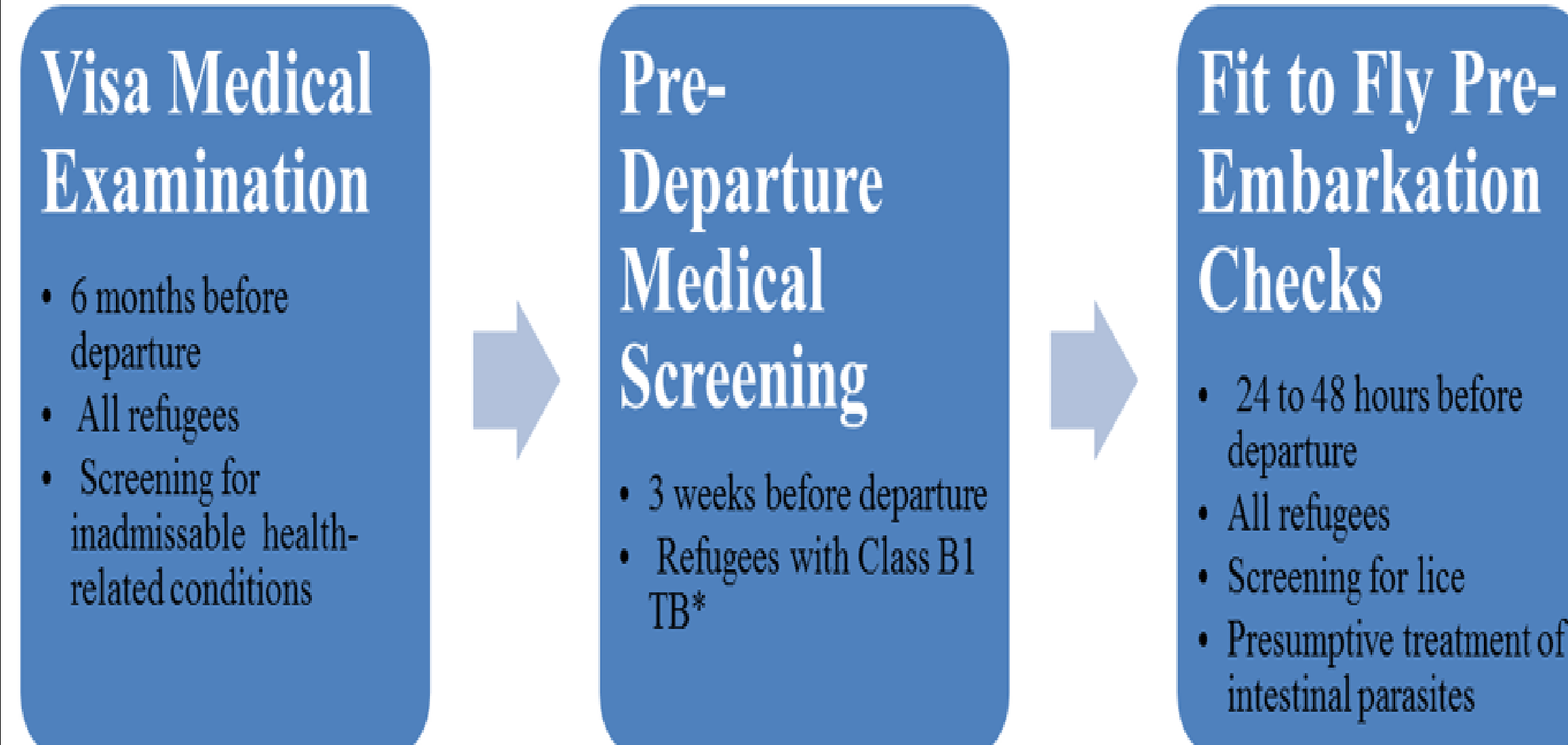


Figure 1. Compliments of www.CDC.gov regarding immigration policy

- Inadmissible health conditions include: active TB, infectious syphilis, gonorrhea, chancroid, granuloma inguinale, lymphogranuloma venereum, and Hansen's disease
- Class B1 TB status includes patients that have completed direct observed therapy, have positive CXR but negative sputum cultures and AFB smears, and those with extrapulmonary TB

## Timeline Prior to Presentation

**Pt is an otherwise healthy 16-year-old Somali refugee male with intermittently draining neck wounds.**

2011	• 2 right-sided neck wounds first noticed by the patient
2011-2014	• Incision and drainage procedure completed twice on neck wounds in Africa with no resolution
6 months PTA	• Visa medical exam completed and patient was given Class B1 TB status for CXR with concerning features but negative PPD and sputum cultures
2 weeks PTA	• Unknown antibiotic given in Africa for 1 week duration for draining neck lesions
4 days PTA	• Pt arrived in the United States after immigrating from a refugee camp in Somalia

## Admission and Hospital Course

### Review of Systems

- Positive weight loss, decreased appetite, right sided neck lesions
- Negative fever, night sweats, cough, hemoptysis, chest pain

### Physical Exam:

- Temp 97.9 HR 62 RR 16 BP 117/75 Wt 38.8 kg
- Gen: small for stated age, no acute distress
- HEENT: OP clear with swelling of right sided posterior soft palate, no uvular deviation, 2 ulcerative lesions with active purulent drainage with surrounding induration, B/L cervical LA
- CV: RRR, no murmur, 2+ pulses
- Lungs: CTAB, normal effort
- Remainder of exam benign

### Labs and Microbiology:

- CBC: WBC 6.6 PMN 41% Lymphs 41% Hgb 13 MCV 80
- CMP: normal limits
- PPD placed on night of presentation 20 x 21 mm indurated at 48 hours
- HIV negative
- Quantiferon: positive
- Wound bacterial culture: MSSA
- Abscess culture: *S. Pneumoniae*
- Abscess AFB stain: negative
- Sputum culture: *M. Tuberculosis*
- Wound Culture: *M. Tuberculosis*
- Drug Susceptibility: Rifampin resistant

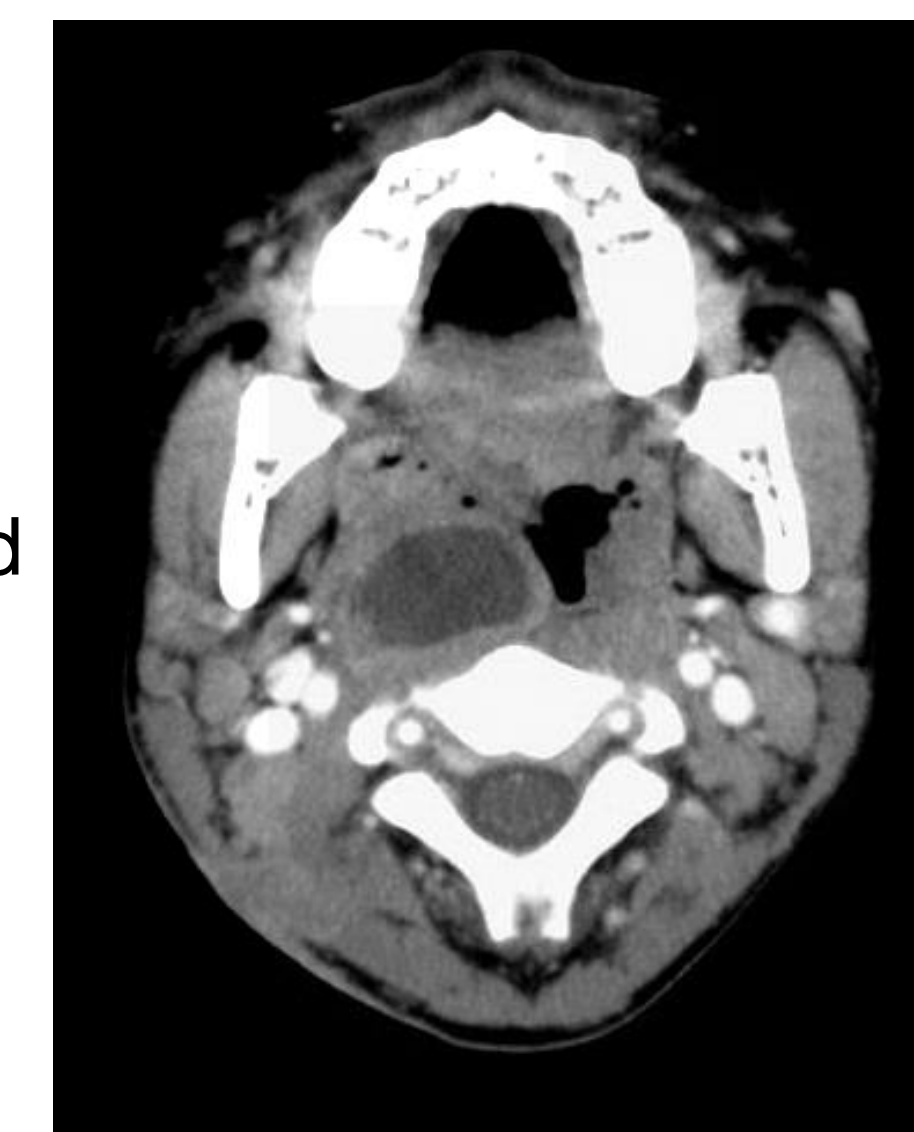


Image 1 (left). CT image with large right retropharyngeal abscess and necrotic nodes in jugular chain, reactive lymph nodes in cervical chain, and chronic overlying cellulitis

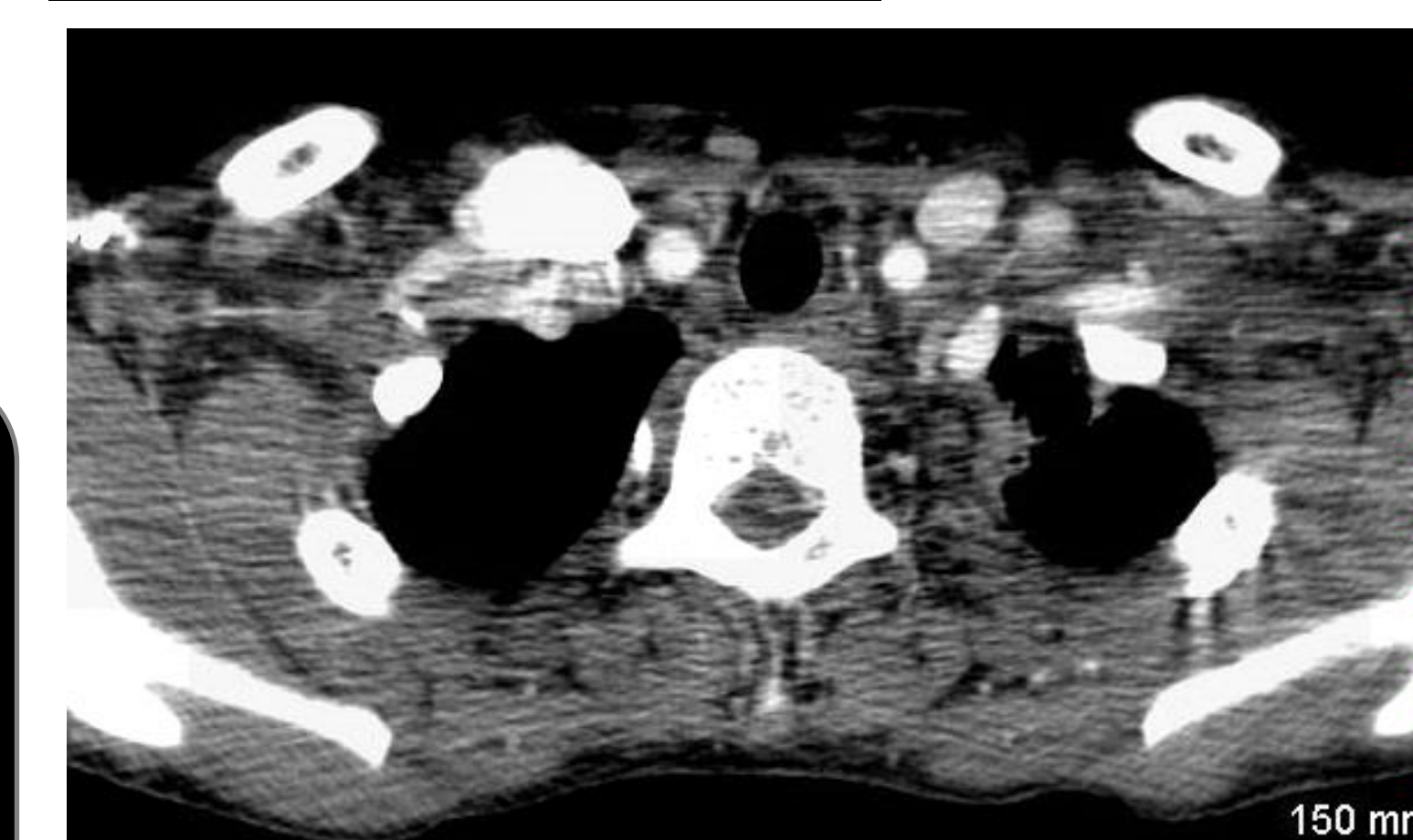


Image 2 (above). CT image with small infiltrate in left upper lobe noted

- Pt admitted without antibiotic coverage due to chronicity and patient stability
- Airborne isolation
- Taken to OR on hospital day 2 for I&D
- ENT and ID consulted

- Pt started on Clindamycin once initial cultures grew *S. Aureus*
- Ophthalmology evaluation completed prior to initiation of RIPE therapy

- Rifampin, Isoniazid, Pyrazinamide, and Ethambutol therapy initiated prior to discharge
- DOT organized by Health Department
- Following drug susceptibility results, Rifampin exchanged for fluoroquinolone

## Patient Follow-Up

Our patient was scheduled to complete 18 months of DOT from the public health department due to his Rifampin resistance and extrapulmonary TB. Upon repeat screening of family, all members of the patient's family that had immigrated with him had seroconverted with a positive PPD and have since completed 9 months of INH therapy for latent TB. With further investigation, it was discovered that despite his class B1 TB status, our patient never had repeat medical screening prior to immigration to recheck his TB status, leading to his departure with active TB. Unfortunately, he has been lost to follow up.

## Discussion

Our patient represents the approximately one third of adolescent patients in the US that present to a healthcare provider with extrapulmonary symptoms prior to diagnosis of *M. Tuberculosis*. The majority of those extrapulmonary symptoms involve the lymph nodes, similar to our patient. Luckily for our patient, he was diagnosed and started on proper treatment within one week of arrival to the US; on average, foreign-born patients live in the US for 3.5 years prior to diagnosis. This prolonged period from arrival to diagnosis increases the likelihood for transmission to other individuals. Current data shows that even in foreign-born patients, 15% are still initially evaluated for disease as a result of incidental radiographic findings. As healthcare providers, it is important to evaluate all risk factors for tuberculosis, especially in at risk populations, in order to facilitate timely diagnosis and prevent further transmission.

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