Tubercular Gluteus Abscesses: A Return to The Early 20th Century or a Consequence of New, Unprecedented Behaviors?

To the Editor—There are increasing reports of cutaneous infections due to rapidly growing mycobacteria after plastic surgery procedures (eg, liposuction and mammoplasty) and after insulin injections, acupuncture, tattoos, or mesotherapy [1]. By contrast, even the common illicit use of injectable liquid silicone in pure or adulterated form for soft-tissue augmentation is associated with iatrogenic infections with rapidly growing mycobacteria [2].

We have recently isolated Mycobacterium tuberculosis from gluteus abscesses of 5 Brazilian transgender human immunodeficiency virus (HIV)-positive patients who years earlier had received multiple fluid silicone injections in the buttocks for cosmetic purposes. All patients were receiving antiretroviral treatment and had CD4+ T cell counts of >300 cells/μL and undetectable HIV RNA at the time of abscess presentation and had been treated for pulmonary tuberculosis years earlier. At the time of abscess presentation, chest radiography and sputum cultures for M. tuberculosis were negative in all but 1 patient, and no bone involvement was detected. The patients received rifampin, isoniazid, pyrazinamide, and ethambutol for 2 months, followed by rifampin and isoniazid for 4 further months. After 3 months of antitubercular treatment, swelling of the glutei resolved and computed tomographic scans showed no evidence of residual abscess. Because previous pulmonary strains were available for 4 patients, we genotyped all the different strains using spoligotyping and Mycobacterium interspersed repetitive unit methods; genotypical identity between the abscess strain and the previous pulmonary isolate was revealed (Table 1). It is notable that sample 4 showed a pattern belonging to the M. tuberculosis Beijing family (among the most prevalent M. tuberculosis strains, the Beijing genotype raises major concern because of its global spreading, hypervirulence, and association with multiple drug resistance).

In recent decades, HIV infection has contributed to a substantial increase in tuberculosis incidence worldwide [3]. The immune system alterations caused by HIV infection can change the natural history of tuberculosis, leading to more frequent extrapulmonary involvement in people living with HIV/AIDS (PLWHAs) than in the general population [4]. It is well known that the abscess is one of the possible manifestations of extrapulmonary tuberculosis [5]. Tubercular abscesses may appear anywhere in the body but are most common in the spine, hips, lymph nodes, and genital region. In contrast, localization to the gluteus, without bone involvement, is an atypical and rare presentation in the general population [6] and, to our knowledge, has never been reported in PLWHAs. Most reports of tuberculous gluteal abscess date back to the early 20th century, and the prevalence of active pulmonary tuberculosis coexisting with musculoskeletal tuberculosis was about 30% [7]; however, some reports indicate that new tuberculous localizations can occur elsewhere many years after adequate treatment of a primary tuberculous focus [8].

The initial hypothesis that tuberculosis may be transmitted to muscles by syringes used by people with pulmonary tuberculosis or by contaminated needles or by contamination of injected material must be discarded, since the molecular characterization displayed a degree of genotypical identity of 100% between clinical isolates from sputum and abscess fluid...
samples for all of the patients. In our opinion, muscle tuberculosis has developed as the result of hematogenous or lymphatic spread of *M. tuberculosis* from a certainly still active pulmonary focus in 1 patient or from apparently healed foci in the other 4 patients. Another possibility is that effective antitubercular therapy for the previous pulmonary foci might have been unable to sterilize a difficult-to-reach environment, such as the silicon collection in the buttocks. It is possible that the decreased immunity associated with HIV infection might have re-activated an underlying tuberculosis infection [4], possibly taking advantage of the presence of silicon oil, as well as silica dust, that could promote the growth of *M. tuberculosis*. Silica dust is a lifelong risk for the development of pulmonary tuberculosis, even if silicosis is not present in the lungs [9], through its direct effect on the pulmonary macrophages [10]. In fact, current evidence regarding the mechanisms by which silica particles determine increased susceptibility to mycobacterial infection suggests that silica particles alter the function of alveolar macrophages and also have cytotoxic effects, thereby reducing their capacity for an effective antimycobacterial defense.

In conclusion, clinicians should consider the possibility of tubercular infection in any transgender patient with previous pulmonary tuberculosis who underwent silicone fluid injections in the buttocks who presents with gluteus abscesses.

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### References


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Table 1. Molecular Characterization of *Mycobacterium tuberculosis* Clinical Isolates

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<th>Patient ID</th>
<th>Sample</th>
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<th>MIRU pattern</th>
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**NOTE.** MIRU, mycobacterium interspersed repetitive unit.