



## Cutaneous Diphtheria- A Potential Lurking Public Health Crisis

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### Introduction

Amid rising vaccine hesitancy, the prevalence of previously uncommon or controlled pathogens is increasing concurrently.

*Corynebacterium diphtheriae* (*C. diphtheriae*) is a gram-positive anaerobe with toxigenic potential, and thus high transmissibility, rendering it capable of causing large-scale public health crises.

*C. diphtheriae* is primarily found in resource-limited settings with low vaccination rates/coverage, particularly affecting those affected by homelessness and those who use intravenous drugs.

Only two cases of cutaneous diphtheria were reported in the United States in 2019 and 2020. Numbers for subsequent years are not available.



**Figure 1:** large non-healing ulcers on a larger defined erythematous base; honey colored crusting sparsely distributed along ulcer edges

### Case Presentation

35-year-old female with past medical history of injection xylazine use, housing insecurity and unknown vaccination history was admitted.

She had chronic non-healing bilateral ulcers with irregular borders, whitish-yellow exudate, and a gray hue on the bilateral anterior thighs and forearms; estimated 25% total body surface area—visible erythematous granulation tissue at the base of each ulcer.

**Figure 2:** Erythematous pyogenic ulcer on a base of healing scar tissue with minimal granulation tissue



On admission, the patient endorsed chills and fatigue. Denied odynophagia, difficulty swallowing, and voice changes. No pseudomembranes were observed in the oropharynx.

Wound cultures from both the forearm and leg were positive for *Corynebacterium diphtheriae*. The patient was placed on strict contact precautions and treated with 14 total days of antibiotics (penicillin V 500 mg q6h and penicillin G 4x10<sup>6</sup> units q6h).

The appropriate New Jersey and Pennsylvania health authorities were notified. The patient was discharged with strict isolation measures. Close contacts were advised Tdap immunization.

Fortunately, the final report from CDC confirmed the *C. diphtheriae* strain to be non-toxicogenic.

**Figure 3:** Erythematous pyogenic ulcer on lateral shin surrounded by healing, scaly, scar tissue with diffuse ulcerations with yellow crusting



### Take Home Messages

Cutaneous diphtheria, although rare, may be emerging as an increasingly important differential for non-healing ulcers in high-risk patients, especially in the current climate of declining vaccination rates.

This case serves as a reminder that even traditionally “uncommon” infections and presentations can resurface, particularly among high-risk populations.

Risk factors include immunocompromised status and inconsistent access to preventive health care.

CDC data shows significant decrease in Tdap vaccination rates in 2022 compared to 2019 in the 19 to 64 year age group.

-Any adult with unknown or no history of Tdap vaccination should receive an initial dose.

Tdap boosters are recommended for all adults every 10 years after initial dose.

Vaccines save lives and are not just for children.

**Do Not Forget Adult Vaccinations.**