



## Letter to the Editor

**Fasciotomy following immunization:  
A cautionary case<sup>\*</sup>**

**1. Introduction**

Reactions to vaccinations typically consist of erythema, pain, and edema at the site of injection. They can be large, concerning to the patient, and are extremely common. We present a case of an immunization resulting in a large local reaction that concerned multiple providers for necrotizing fasciitis. This led to hospitalization and fasciotomy of the patient's injection site, ultimately revealing healthy subcutaneous tissue.

**2. Case description**

A 26-year-old female with a history of refractory idiopathic thrombocytopenic purpura status post splenectomy presented to an immunizations clinic for 23-valent pneumococcal polysaccharide (PPSV23) immunization nine weeks after receiving the 13-valent pneumococcal vaccine (PCV13). Three hours after immunization in her right deltoid, the patient experienced pain, swelling, and erythema at the injection site. Her symptoms increased in severity leading her to seek care in the emergency department. Physical examination revealed tenderness to palpation, erythema, and edema extending from the right deltoid to mid-humerus. Laboratory evaluation was significant for a leukocyte count of  $17.8 \times 10^9/l$ , hemoglobin of 11.7 g/dL, and a platelet count of  $92 \times 10^9/l$ . C-reactive protein was 0.50 mg/dL (normal 0–0.49 mg/dL), and erythrocyte sedimentation rate was within normal limits. Contrast axial CT imaging of the right humerus demonstrated extensive edema of the brachialis muscle and subcutaneous tissue, causing complete stenosis of the basilic vein with less pronounced edema involving the surrounding muscles. Orthopedic surgery was consulted for a diagnosis of possible necrotizing fasciitis. The patient was treated with multiple intravenous antibiotics and underwent fasciotomy with excisional biopsies of the deltoid fascia and muscle. Findings included healthy-appearing tissue without evidence of necrotizing fasciitis. Negative gram-stain preceded deep wound cultures that failed to isolate any organisms. The patient fully recovered with resolution of edema two days after surgery.

**3. Discussion**

We present a patient with symptoms of a severe large local reaction after vaccination that concerned multiple providers for

necrotizing fasciitis. CT imaging demonstrated tissue inflammation, but ultimately no evidence of necrotizing fasciitis was discovered during fasciotomy, and no infectious cause was identified. Pain, erythema, and edema occur at a rate of 60.0%, 20.3%, and 16.4%, respectively, among recipients of PPSV23 [1]. Rarely, systemic inflammatory symptoms of fever, leukocytosis, rigors, and vomiting following PPSV23 can occur [2]. However, immunizations complicated by necrotizing fasciitis are exceedingly rare: only case reports after bacillus Calmette–Guérin vaccinations have been documented [3]. This patient's experience is consistent with a study of Alaska Native adults in which one group who received PPSV23 two months after PCV7 experienced arm swelling at nearly twice the incidence as those who had a six month delay (18/29 vs. 10/29,  $P = 0.01$ ) [4]. The most recent ACIP recommendations regarding timing between PCV13 and PPSV23 acknowledges this concern and for immunocompetent adults  $\geq 65$  years recommends at least a one-year interval [5]. However, there was no error in the administration of PPSV23 nine weeks following PCV13 in this splenectomized patient, where an interval of eight weeks is recommended [6]. Clinicians would be wise to remember that localized infection following immunization is rare, while large local reactions are common, so as to avoid unnecessary medical treatments surgical interventions.

*The views expressed are those of the authors and do not reflect the official view or policy of the Department of Defense or its components.*

**Declaration of interest**

None.

**References**

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<sup>\*</sup> All authors attest they meet the ICMJE criteria for authorship.

Abbreviations: PPSV23, 23-valent pneumococcal polysaccharide PCV13, 13-valent pneumococcal conjugate vaccine

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