

Case illustrated

Post-COVID-19 vaccination shoulder abscess and pleuroparenchymal pulmonary lesion due to *Burkholderia pseudomallei*[☆]



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Case illustrated

A 48-year-old man, known diabetic, presented with an increasingly painful swelling in the back below the left shoulder (Fig. 1A). He had low-grade fever and occasional cough of 1½ -months duration. He was vaccinated with COVID-19 vaccine on his left deltoid, one week before the onset of the swelling. Subsequently, he developed a painful swelling on his left arm, spreading to the shoulder and scapular region along with decreased limb movements. Over the next few days, he had acute onset of fever and cough with mucoid expectoration followed by progressive deterioration of his health, despite receiving anti-tubercular drugs. On examination, the patient was febrile (38.8 °C). His left arm was swollen and tender, he was displaying a reduced range of movement and was unable to raise his arm above the shoulder. An ultrasound confirmed an abscess, and chest radiographs showed disseminated pulmonary pathology with bilateral lung abscesses and pleural effusions (Fig. 1B & C). Pus culture yielded pure growth of *Burkholderia pseudomallei* susceptible to ceftazidime, trimethoprim-sulfamethoxazole, imipenem, amoxicillin-clavulanate and doxycycline. The patient was treated with

intravenous meropenem (1 gm every eight hours) for three weeks. Following improvement, with resolution of the abscess and decrease in respiratory symptoms, he was discharged on the 23rd day of hospitalization with advice for oral trimethoprim-sulfamethoxazole for four months.

Intramuscular route is a common site for administering various medications and vaccines in healthcare practice. Though a minor procedure, rarely it can result in major complications like abscesses, skin necrosis, intra-articular infections, bacteremia and generalized sepsis that can lead to multi-organ failure [1,2]. Cases of post-vaccination injection abscesses have been reported due to *Staphylococcus aureus* and Mycobacterial species following the use of Infanrix-Hexa[®] (Diphtheria, Tetanus, Pertussis, Polio, Hib, Hep B) and Bacillus Calmette–Guérin vaccines [2,3]. COVID-19 vaccine has been reported to induce pyoderma gangrenosum, cellulitis, myositis, and subacromial-subdeltoid bursitis probably due to a complex interplay of neutrophilic activation and subsequent infiltration triggered by the viral antigens as well as type IV or immune-complex-mediated hypersensitivity reactions [4,5]. Hence, subtle alterations in immune responses following the vaccination leading to re-activation of *B. pseudomallei* infection in our patient is a likely possibility. This is the first report of melioidosis linked to COVID-vaccination and adds to an unusual spectrum of *B. pseudomallei* infection. Further research is needed to determine whether the bacteria entered through the injection site or activation of *B. pseudomallei* occurred in response to altered host immunity following COVID vaccination.

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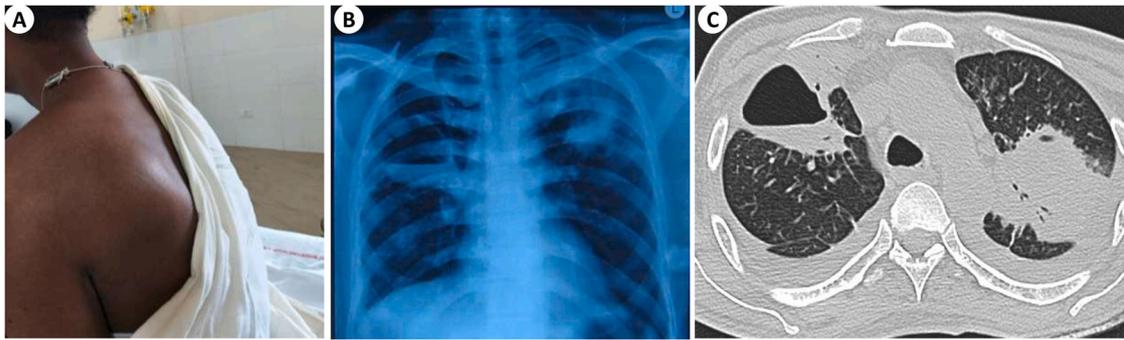


Fig. 1. Post-COVID vaccination abscess manifesting as (A) soft-tissue inflammation and swelling on the back, below the left shoulder, (B) bilateral lung abscess on chest radiograph and (C) bilateral lung abscess with pleural effusion on computed –tomography scan.

Ethical approval

Ethical approval was obtained from the Institutional Ethics Committee of AIIMS Bhubaneswar, Odisha, India.

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Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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CRedit authorship contribution statement

Srujana Mohanty: Conceptualization, literature search, Writing – original draft, Writing – review & editing, Submission. **Prasanta Raghav Mohapatra:** Conceptualization, Writing – review & editing, sharing images, mentorship. **Sujata Devi:** Review & editing,

literature search, mentorship. **Swarnatrisa Saha:** Writing – review & editing, literature search, investigation.

Declaration of Competing Interest

The authors report no declarations of interest.

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