

A Rare Disseminated Presentation of Melioidosis: Orbital Cellulitis, Superior Ophthalmic Vein Thrombosis, and Probable Subdural Abscess

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Background

- Melioidosis, caused by a gram-negative bacterium *Burkholderia pseudomallei*, is endemic in tropical regions such as Southeast Asia and northern Australia.
- Most infections are asymptomatic. While pneumonia and sepsis are common presentations, orbital and intracranial infections are rare and often under-recognized. These manifestations pose diagnostic and therapeutic challenges, particularly in resource-limited settings.

Clinical presentation and course

Identification: 58-year-old Thai man with poorly controlled diabetes (HbA1C 14.2), hypertension, and dyslipidemia.

Presentation (at rural hospital): 1 week of fever, malaise, dry cough, and progressive right eye swelling. The examination showed fine crepitation at left lower lung. At presentation, orbital involvement was not recognized.

Initial management: Diagnosed with pneumonia; treated with IV ceftriaxone + oral roxithromycin.

Clinical course: Worsening periorbital swelling and headache noted 4 days after admission.

Microbiology: Blood cultures grew

Burkholderia pseudomallei in both sets.

Referral: Sent to a tertiary center for suspected central nervous system (CNS) involvement.

At referral hospital: Focal seizure progressing to a generalized tonic-clonic seizure.

Imaging diagnosis: Orbital cellulitis, superior ophthalmic vein thrombosis (SOVT), and subdural abscess.

Intensive therapy: Returned to the rural hospital to complete IV ceftazidime for 28 days.

Anticoagulation: Subcutaneous enoxaparin bridged to warfarin.

Eradication therapy: Discharged on oral trimethoprim-sulfamethoxazole (TMP-SMX) for 6 months; continues INR monitoring; continues oral phenytoin.

Outcome: Improved clinically, no further seizures; remains under ophthalmologic follow-up.

Imaging

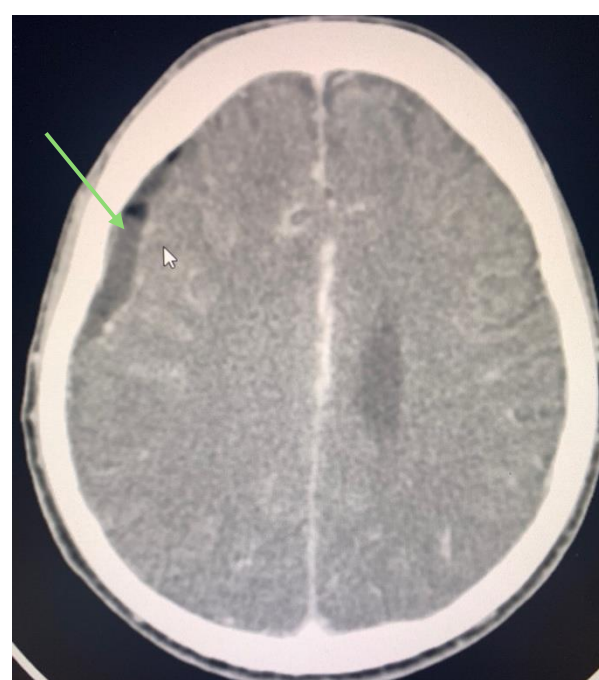


Figure 1. Axial contrast-enhanced CT brain showing a crescentic hypodense lesion along the right frontoparietal convexity (green arrow), suggestive of early subdural abscess or subdural hygroma.

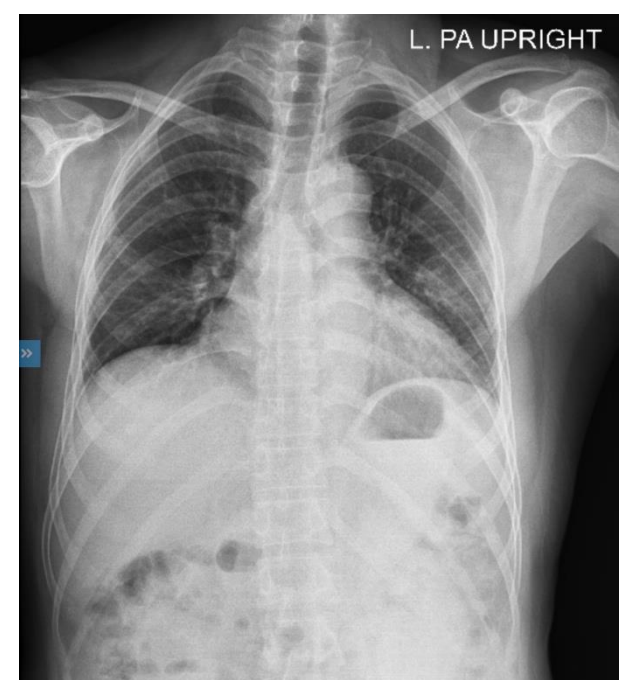


Figure 2. Chest radiography demonstrating bilateral reticular infiltrates, consistent with interstitial pulmonary involvement



Figure3. Clinical photograph showing right periorbital swelling and ptosis during follow-up

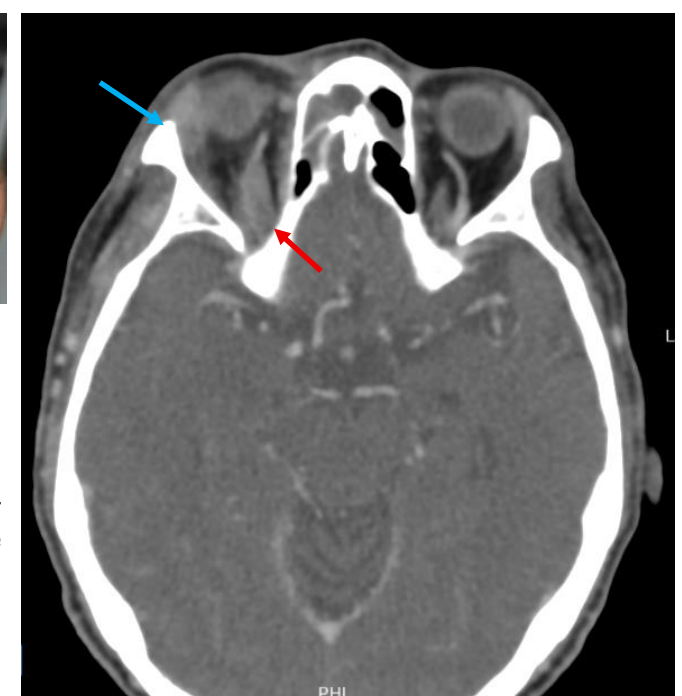


Figure 4. (Right side) Axial contrast-enhanced CT showing enlargement of the right superior ophthalmic vein (red arrow), consistent with thrombosis. Associated periorbital soft tissue stranding and mild proptosis are also noted (blue arrow).

Discussion and conclusion

- Melioidosis often presents as community-acquired pneumonia or sepsis; in endemic regions, early recognition—especially in immunocompromised patients—is critical to reduce mortality.
- In this case, direct ocular exposure likely inoculated *B. pseudomallei*, leading to orbital cellulitis with SOVT and intracranial extension.
- The Thai Melioidosis manual offers a practical framework but lacks organ-specific recommendations for the intensive-phase. Darwin guideline supports prolonged IV therapy (8 weeks) for CNS melioidosis before a 6-month TMP-SMX eradication phase.
- Evidence gap: There is no specific guideline for SOVT secondary to melioidosis; current management is extrapolated from CNS/deep-site melioidosis and infectious SOVT literature.
- Future direction: Develop organ-based protocols and collect local outcome data to reduce relapse and standardize care.

Refereces

1. CDC. Clinical overview of melioidosis. 2024. Available from: <https://www.cdc.gov/melioidosis>
2. Department of Disease Control, Thailand. Melioidosis Manual. 2021.
3. Northern Territory Health. Darwin Melioidosis Guidelines. 2024.
4. Chen L, Gelfand Y, Martinez G, Rizk E. Superior ophthalmic vein thrombosis induced by orbital cellulitis: An ophthalmic emergency. *Cureus*. 2021;13(9):e18265.
5. Sotoudeh H, Shafaat O, Aboueldahab N, et al. Superior ophthalmic vein thrombosis: What radiologist and clinician must know? *Eur J Radiol Open*. 2019;6:258–264.

Human Ethics

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