



Unusual presentations of tuberculosis: A diagnostic challenge

Sirikarn Tangcheewinsirikul^a, Weena Phuthongkam^b, Thiraporn Kanjanaphan^{c,*}

^a Division of Rheumatology, Department of Pediatrics, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand

^b Division of Dermatology, Department of Pediatrics, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand

^c Division of Infectious Diseases, Department of Pediatrics, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand

ARTICLE INFO

Keywords:

Tuberculosis
Vasculitis
Arthritis
Liver abscess
Pediatric

Case presentation

Tuberculosis (TB) is a disease caused by *Mycobacterium tuberculosis* [1]. It constitutes a significant global health concern, with approximately 10 million new TB cases diagnosed annually, resulting in 1.5 million deaths each year [1]. Common symptoms of tuberculosis in children include coughing, lethargy, fever, failure to thrive, and night sweats [2]. Diagnosis relies on a combination of clinical assessment, radiological imaging, and epidemiological considerations [3]. It is worth noting that clinical presentations of TB involving symptoms such as fever, arthritis, and vasculitis are relatively rare. Cutaneous tuberculosis (CTB) was reported in less than one percent and presented in varying manifestations such as inflammatory papules, verrucous plaques, suppurative nodules, chronic ulcers, tuberculous chancre, scrofuloderma, orificial tuberculosis, metastatic abscess, TB verrucosa cutis, and lupus vulgaris [4–6]. Consequently, the presence of atypical clinical manifestations can lead to delayed diagnosis and treatment, potentially resulting in complications at a later stage.

A healthy 15-year-old girl presented with one month of joint swelling (Fig. 1a), fever, and leg rash, along with vasculitis lesions on her legs (Fig. 1b). The initial differential diagnosis included Granulomatosis with Polyangiitis (GPA), Systemic Lupus Erythematosus (SLE), TB, Nocardia, and fungal infection. A chest X-ray (CXR) revealed lung infiltrations (Fig. 1c), skin biopsy, and sputum both tested positive 1 + for acid-fast stain (AFB). She was treated with anti-TB drugs consisting of isoniazid (H), rifampicin (R), pyrazinamide (Z), and ethambutol (E), but showed

no improvement after three weeks. A computed tomography (CT) scan of her chest and abdomen revealed lung consolidations with a tree-in-bud pattern (Fig. 1d) and a liver lesion (Fig. 1e). Liver biopsy confirmed AFB and detected TB without rifampicin resistance by Xpert MTB/RIF testing. Following liver aspiration and continued HRZE treatment, the patient's condition improved within five days.

In this case, which presented an unusual presentation, CXR aided in diagnosing TB. Therefore, for patients with prolonged fever and vasculitis residing in high-TB prevalence areas like Thailand [7], considering TB is essential.

Ethical approval

Ethics approval and consent from Institutional Review Board Faculty of Medicine Vajira Hospital. (COE: 013/2023 X).

Author contributions

TK devised and wrote the manuscript. TK and ST provided figure preparation. WP, ST, and TK revised and edited the manuscript. All authors contributed to patient care.

Declarations of Competing Interest

The authors have no competing interests to declare.

* Correspondence to: Division of Infectious Diseases, Department of Pediatrics, Faculty of Medicine Vajira Hospital, Navamindradhiraj University, 681 Samsen Road, Dusit, Bangkok 10300, Thailand.

E-mail address: thiraporn@nmu.ac.th (T. Kanjanaphan).

<https://doi.org/10.1016/j.idcr.2024.e01971>

Received 23 September 2023; Received in revised form 16 April 2024; Accepted 22 April 2024

Available online 26 April 2024

2214-2509/© 2024 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



Fig. 1. Multiple petechiae and purpura localized on the lower legs (a), marked swelling with tenderness on the left foot and ankle (b). Patchy infiltration was observed in x-ray mainly on the right upper lung zone (c), while CT scan of the chest revealed several consolidations with air bronchogram and reticulonodular opacities with tree-in-bud pattern scattering throughout both lungs (d). Hypodense lesion at the right lobe of the liver (e).

Funding

Not applicable.

CRediT authorship contribution statement

Thiraporn Kanjanaphan: Investigation, Supervision, Writing – review & editing. **Weena Phuthongkam:** Supervision. **Sirikarn Tangcheewinsirikul:** Writing – original draft.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- [1] World Health Organization. Tuberculosis (Internet). 2019 (cited 2023 Sep 3). Available from (https://www.who.int/health-topics/tuberculosis#tab=tab_1).
- [2] Centers for Disease Control and Prevention. Tuberculosis in specific populations (Internet). 2022. (cited 2023 Sep 3). Available from (<https://www.cdc.gov/tb/topic/populations/tbinchildren/default.htm>).
- [3] World Health Organization. *Guidance for national tuberculosis programs on the management of tuberculosis in children*. 2nd edition. Geneva: World Health Organization; 146.
- [4] Handog EB, Gabriel TG, Pineda RT. Management of cutaneous tuberculosis. *Dermatol Ther* 2008;21(3):154–61.
- [5] Lai-Cheong JE, Perez A, Tang V, Martinez A, Hill V, Menagé Hdu P. Cutaneous manifestations of tuberculosis. *Clin Exp Dermatol* 2007;32:461–6.
- [6] Bravo FG, Gotuzzo E. Cutaneous tuberculosis. *Clin Dermatol* 2007;25:173–80.
- [7] World Health Organization. Global Tuberculosis Report 2022 (Internet). 2022 (cited 2023 Sep 3). Available from (<https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2022>).