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Deep Vein Thrombosis in Rickettsiosis of the Typhus Group

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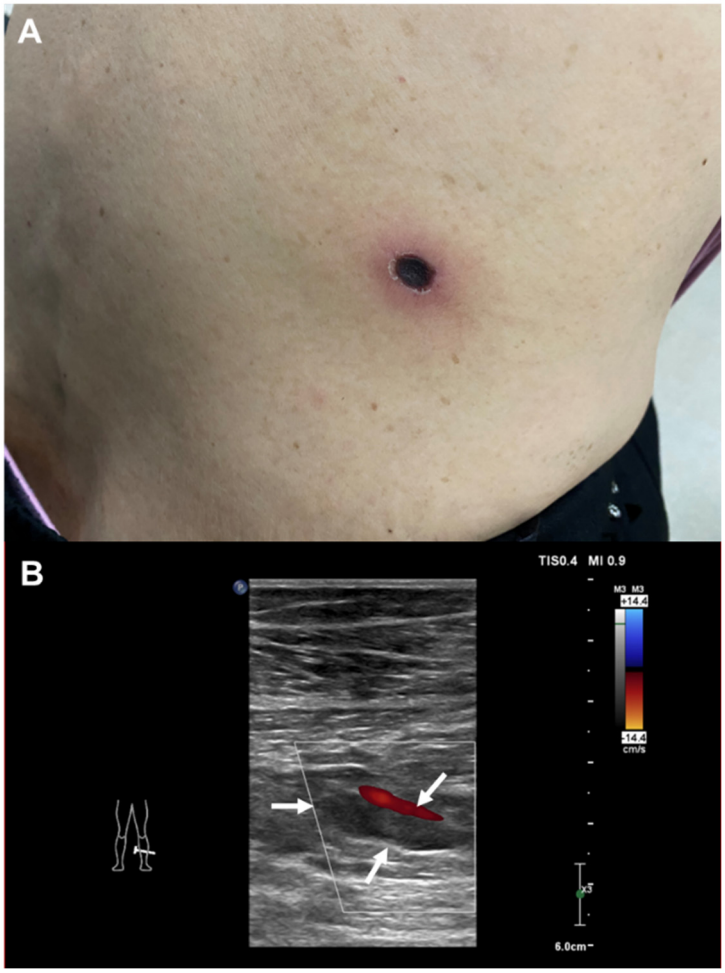

Figure 1. A 58-year-old previously healthy Chinese female sanitation worker was admitted with a one-week history of fever, headache, nausea, and vomiting. Although oseltamivir had been prescribed 6 days before admission, she was unresponsive. On the day of admission, physical examination revealed an eschar (Panel **A**) on the right lower back and mild swelling of the left lower leg, which was non-pitting edema. Complete blood count showed

lymphopenia and thrombocytopenia. Liver function tests indicated a marked increase in transaminase levels. Coagulation function tests revealed a high D-dimer (11.02 μg/mL) with normal prothrombin time and activated partial thromboplastin time. Rickettsiosis was clinically diagnosed, and doxycycline was subsequently started. Given the mild swelling of the left lower extremity and abnormal D-dimer, suggesting a risk of deep vein thrombosis (DVT), a subsequent doppler ultrasound examination was performed. Color Doppler flow imaging for the left lower leg (Panel **B**) revealed a hypoechoic clot (arrow) within the intermuscular vein lumen, measuring 27 mm × 7 mm, not fully compressible under probe pressure, with no obvious blood flow signal in the local intermuscular vein. The lower-limb DVT of the left lower leg was confirmed, which was treated with low-molecular-weight heparin and rivaroxaban. Although fever and DVT responded promptly to treatment, the initial Weil-Felix test by Shenzhen Center for Disease Control and Prevention was negative, and the genes of rickettsiae were not detected in serum by metagenomic next-generation sequencing (mNGS) [1]. Owing to the negative serological and NGS results, a repeat Weil-Felix test was conducted on the residual sample, which showed an OX-19 titer of 1:160. The final diagnosis was rickettsiosis of the typhus group. Notably, DVT develops in only a tiny minority of foci of vascular infection and injury in rickettsiosis, making this presentation exceptional [2,3]. Although NGS is an advanced powerful tool for laboratory diagnosis of infectious diseases, it has to be used in conjunction with traditional laboratory tests [4,5].

Author Contributions

F.X.: conceptualization, methodology, visualization, writing-original draft preparation; C.D.: investigation, visualization, writing-reviewing and editing. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

The retrospective study was approved by the Medical Ethics Committee of The University of Hong Kong-Shenzhen Hospital ([2022]120).

Informed Consent Statement

Patient consent was exempted as this is a retrospective study and no additional testing was performed.

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Conflicts of Interest

The authors declare no conflict of interest.

Use of AI and AI-Assisted Technologies

No AI tools were utilised for this paper.

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