

Images from the Medical Laboratory

Weihua Zhao and Tongyan Zhang*

Clarithromycin crystalluria

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A 26-year-old man visited the clinic to receive a consultation on the cloudy urine he had since the morning. He used a single dose of intravenous clarithromycin (500 mg) to treat rounded growth near the head of the penis in one clinic the day before he visited, and we found that the growth was pearly penile papules that needed no treatment. The urine examination revealed cloudiness (Figure 1A), the presence of erythrocytes and some leucocytes, a pH of 6.5, a specific gravity of 1.044, and multiple crystals that appeared as needles (Figure 1B and C).

This patient was diagnosed with clarithromycin crystalluria.

Reports of clarithromycin-induced crystalluria are rare, but antibiotic-related crystalluria has been reported previously. Crystalluria was present in 8.2 % of almost 10,000

regular urine samples; most of these ‘typical’ crystals were mainly calcium oxalate and uric acid, and one in three ‘atypical’ crystals due to the use of drugs was caused by antibiotics [1]. Several antibiotics can cause transient crystalluria, including sulfadiazine, amoxicillin, ampicillin, nitrofurantoin, quinolones and ciproxin. Risk factors are drug overdose, dehydration, hypoalbuminemia, and low or high urine pH [2–4]. After discontinuation, crystalluria usually disappears within 1–5 days, hematuria within three days and acute renal failure within 3–17 days [3, 5]. Clarithromycin-induced crystalluria was suspected in this patient, and the only medication used, clarithromycin, was stopped. After three days, the macroscopic crystalluria disappeared, and the urine test results remained normal until the 10th day of follow-up.

Research ethics: The research has complied with all the relevant national regulations, institutional policies, and in accordance with the tenets of the Helsinki Declaration, and has been waived ethics approval by the authors’ Institutional Review Board (Efe2024/003/01).

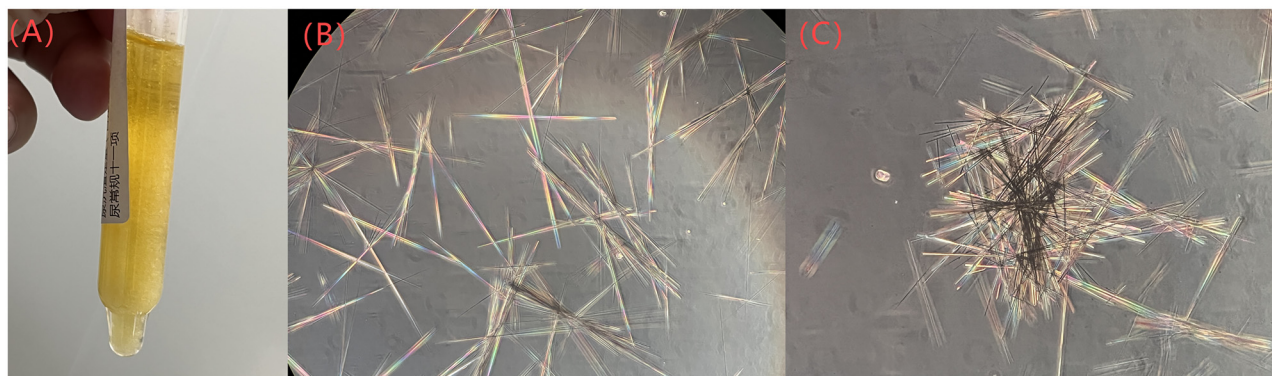


Figure 1: Crystalluria. (A) Appearance of cloudy urine; (B) and (C) phase contrast microscopy images showing rainbow-colored needle-shaped crystals ($\times 100$ and $\times 200$ magnification, respectively).

*Corresponding author: **Tonayan Zhang**, Infectious Diseases

Department, Second Affiliated Hospital of Tianjin University of Traditional Chinese Medicine, Tianjin, China, E-mail: zhangtongyan610@126.com.

<https://orcid.org/0000-0001-7426-690X>

Weihua Zhao, Laboratory Department, Second Affiliated Hospital of Tianjin University of Traditional Chinese Medicine, Tianjin, China

Informed consent: Informed consent was obtained from the patient prior to the study.

Author contributions: All authors contributed to data collection and discussed the final version of paper. Weihua Zhao and Tongyan Zhang had substantial contributions to the conception or design of the work; or the acquisition, analysis, and interpretation of the work; AND Drafting the work or revising it critically for important intellectual content; AND Final approval of the version to be published; AND Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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