



Internal Medicine Flashcard

Chronic urticaria with inflammation

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1. Case description

A 67-year-old man presented with a 15-year history of chronic urticaria. It was distributed symmetrically on the limb trunk (Fig. 1A and B) without pruritus. No fever or joint pain or headache is observed. He showed no signs of angioedema. He was referred to our hospital for treatment of chronic urticaria. An antihistamine was ineffective. He was diagnosed with mild sensorineural hearing loss. He had no family history of autoinflammatory diseases.

White blood cell counts and C-reactive protein (CRP) levels were 8000/ μ L and 10 mg/dL, respectively. Creatinine, amyloid A, and urine protein levels were 1.2 mg/dL (eGFR 47.3 mL/min/1.73m²), 8.3 μ g/mL, and 2.7 g/day, respectively. Complement C3 and C4 levels were normal. Monoclonal protein of immunoglobulin was negative. Pathological findings in the skin lesion showed remarkable infiltration of neutrophils at the interstitial lesion (Fig. 1C and D), but no vasculitis. What is the diagnosis?

2. Discussion section

A *NOD-like receptor protein 3 (NLRP3)* mutation was detected, and Muckle–Wells syndrome (MWS) was diagnosed. After canakinumab treatment, the rashes disappeared, and CRP and urine protein levels normalized.

MWS, characterized by intermittent fever, urticaria, progressive sensorineural deafness, and renal amyloidosis, is an inherited auto-inflammatory disease caused by the *CIAS1/NLRP3* mutation. This causes an inflammatory reaction resulting in elevated CRP and amyloid A levels, thus leading to renal failure due to amyloidosis [1].

Interleukin-1 antagonists prevent organ damage progression and

improves the quality of life (QOL) of patients diagnosed with MWS [2]. However, the average time to diagnosis is 18.5 years [1]. While most autoinflammatory diseases occur in children, MWS is often diagnosed in adults. Adult cases have less fever and more hearing loss than pediatric cases; the absence of severe symptoms such as periodic fever causes diagnostic delay [1].

For early diagnosis, MWS should be considered for recurrent and persistent urticarial rashes in which antihistamines are ineffective, pruritus is absent, urticarial rashes are symmetrical, and CRP levels are high [3].

The most characteristic finding in MWS is the high CRP level.

Pathological neutrophil infiltration encompasses blood vessels and interstitial lesions [2]. When patients with chronic urticaria have these characteristics, M protein, urinalysis, and pathological and genetic tests are recommended to distinguish cryopyrin-associated periodic syndrome, Schnitzler syndrome, and urticaria-like vasculitis. Early MWS diagnosis improves patients' QOL.

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Informed consent

We have obtained written consent from the patient for publication of the report.

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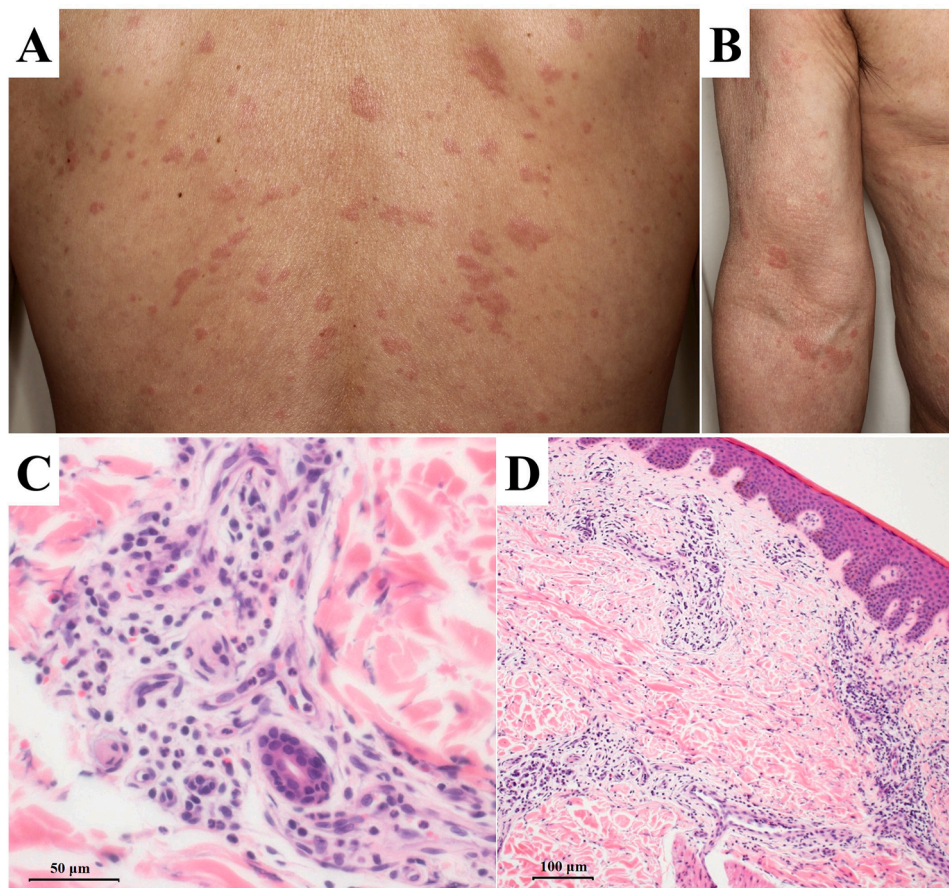


Fig. 1. Urticaria is seen to be symmetrically distributed on the trunk (A) and upper limb (B). (C and D) Pathological findings reveal remarkable infiltration of neutrophils at the interstitial lesion.

Declaration of Competing Interest

The authors declare they have no conflict of interest.

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