

Amoxicillin-induced DRESS syndrome without eosinophilia

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Key clinical message

Despite the name, eosinophilia is not essential for diagnosing drug reaction with eosinophilia and systemic symptoms (DRESS syndrome).

Early recognition and stopping the offending drug are vital to managing this condition, as it can otherwise lead to high mortality rates.

Case presentation

A 47-year-old African female with no prior medical history was prescribed amoxicillin 1.5 gram per day in three divided doses for acute upper respiratory tract infection. She responded well, but eighteen days later she reported fever, a skin rash on her limbs and trunk, widespread body itching, yellowish discoloration of the eyes, and abdominal pain marked on the left upper region. Physical examination was notable for fever, sclera jaundice, facial edema, diffuse erythema and scaling involving the trunk, limbs and the face (*Figure 1A*). The oral mucosa lining was intact. There was tenderness on left hypochondriac, and the liver

span was within the normal limit. Laboratory test results revealed elevated serum alkaline phosphatase (233 U/L), moderately elevated transaminases: keeping with a mixed pattern of liver injury. conjugated bilirubin (81 $\mu\text{mol/L}$), alkaline phosphatase (470 U/L), creatinine kinase (23 ng/mL) was also elevated. Peripheral eosinophils count (0.01 x 109/L) was within the normal limit. Further testing dismissed evidence of metabolic, autoimmune, or infectious causes of liver injury. A Computed tomography and Magnetic resonance imaging showed no structural abnormalities on the liver, gallbladder, pancreas or bile ducts except for left anterolateral abdominal wall thickening without intramuscular collection. A skin biopsy revealed dermal pigment incontinence and localized inflammation with lymphocytic predominance. Similarly, a liver biopsy indicated bile accumulation in centrilobular hepatocytes and Kupffer cells, as well as inflammatory infiltrates predominantly of lymphocytes and eosinophils

(Figure 2).

A definitive case of DRESS related to amoxicillin was established after she earned 6 points on the RegiSCAR criteria [1], which included skin rash extent > 50%, face edema and scaling, hepatic injury, myositis, atypical lymphocytes, and remission of symptoms after 2 weeks. She was prescribed prednisolone at a dose of 50 mg (1 mg/kg) per day, along with cetirizine at a dose of 10 mg per day, and Vaseline petrolatum twice daily. The facial edema and exfoliative dermatitis gradually improved after the second week from the onset of symptoms (Figure 1B) and normalization of transaminases and bilirubin was attained after 90 days (Figure 3 and 4).

Discussion

DRESS is commonly characterized by a cutaneous eruption, eosinophilia, and visceral organs involvement, the liver is the visceral organ most commonly affected. Only 10% of cases present atypical with normal eosinophil count [1]. Antimicrobials (especially penicillin and sulfonamides) are the main cause [2]. DRESS syndrome can be life-threatening and poses a diagnostic predicament considering its atypical presentations. Most patients recover entirely within weeks or months of stopping the medication [3].



Figure 1: (A) Facial edema, scaling and desquamation of skin 5 days before admission. (B) Finding after initiation of the treatment, day 18 since onset

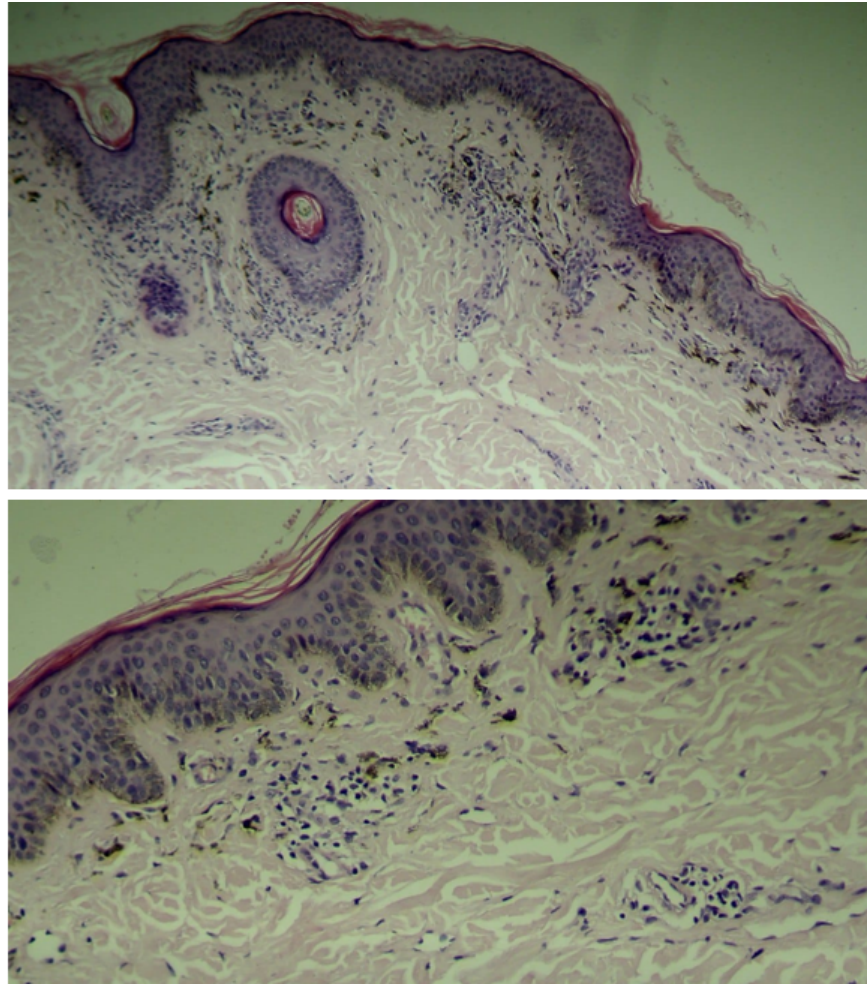


Figure 2: Skin biopsy demonstrating fragment composed of an unremarkable epidermis with pigment incontinence in the dermis and focal inflammation composed of mainly lymphocytes. All panels were prepared using Hematoxylin and Eosin (H&E) stain, with a magnification of 100x.

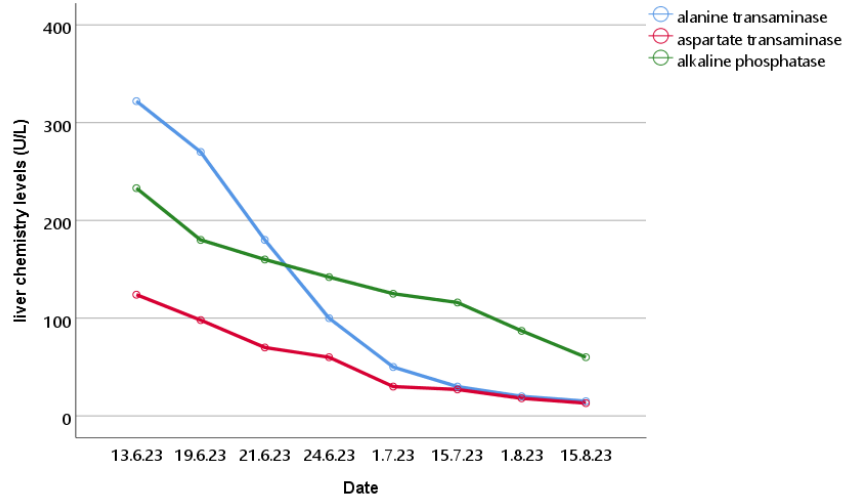


Figure 3: Evolution of transaminases until resolution

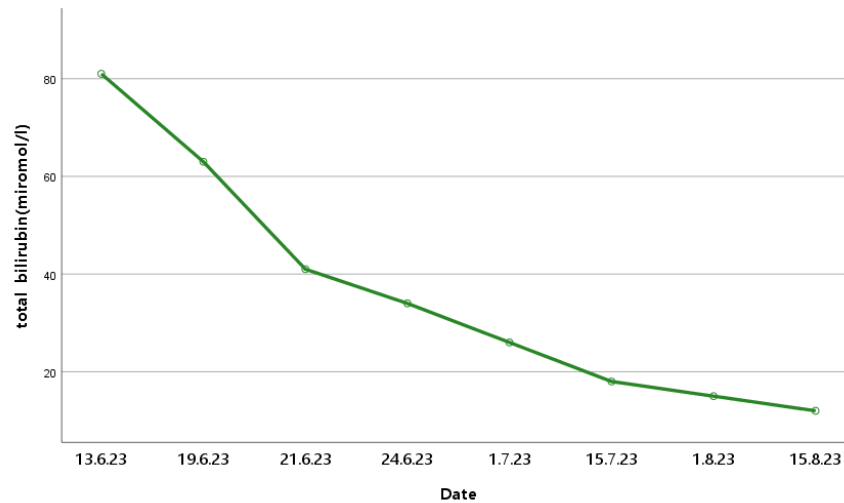


Figure 4: Evolution of serum bilirubin until resolution.

Author's contribution

BA : writing – original draft; writing – review & editing. **FK** : writing – original draft; writing – review & editing. **NFM** : writing – review & editing. **SD** : supervision, writing – review & editing. **ES** : supervision, writing – review & editing.

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Conflict of interest statement

The authors have no conflict of interest to declare.

Data availability statement

All the data underlying the results is available as part of the case, and no additional source data is required.

Ethical approval

All ethical issues have been thoroughly considered by the authors before this case and any related images were published, the patient's written informed consent was obtained. Our institution does not require ethical approval for reporting individual cases.

Consent

The patient provided written in-formed consent for the publication of the case report

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