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Antitubercular Therapy-Induced DRESS Syndrome: A Case Report

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Abstract **Case Report**

Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) syndrome is a rare and severe hypersensitivity reaction characterized by cutaneous, systemic, and biological involvement. Although uncommon, antitubercular drugs can induce this syndrome, posing significant management challenges. We report the case of a 70-year-old man treated for Pott's disease who developed DRESS syndrome during the continuation phase of antitubercular therapy. Symptoms included a widespread pruritic exanthem and severe eosinophilia (1,980/mm³). The diagnosis was confirmed by skin biopsy and the Registry of Severe Cutaneous Adverse Reaction (RegiSCAR) score. Withdrawal of suspected drugs and corticosteroid therapy led to resolution of symptoms. Sequential reintroduction of antitubercular drugs under close monitoring allowed successful completion of therapy without recurrence. This case highlights the importance of early recognition and meticulous management of DRESS syndrome in patients undergoing essential prolonged therapies.

Keywords: DRESS Syndrome, Antitubercular Therapy, Hypersensitivity Reaction, Pott's disease, Case Report.

INTRODUCTION

Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) syndrome is a rare but potentially life-threatening adverse drug reaction. It involves multiple organ systems and is characterized by fever, rash, lymphadenopathy, hematologic abnormalities, and visceral involvement. While antitubercular drugs are rarely implicated, their essential role in treating tuberculosis presents unique challenges when hypersensitivity reactions occur. We present a case of antitubercular drug-induced DRESS syndrome in a patient undergoing treatment for Pott's disease.

CASE PRESENTATION

A 70-year-old man presented with lower back pain and progressive paraplegia. Thoracolumbar magnetic resonance imaging (MRI) revealed a posterior extradural collection compressing the dorsal spinal cord at the D2-D3 level (Figure 1).

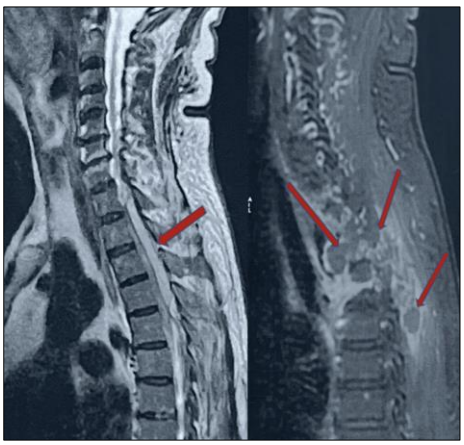

Figure 1: Thoraco-lumbar MRI showing a multiloculated posterior extradural collection with dorsal spinal cord compression at the level of D2-D3

Following surgical decompression and histopathological confirmation of tuberculous spondylodiscitis, antitubercular therapy was initiated, including ethambutol, isoniazid, pyrazinamide, and rifampin (according to the National Tuberculosis Control Program). The intensive phase was uneventful.

During the continuation phase, nine weeks after initiating therapy, the patient developed a pruritic, edematous rash. Clinical findings included maculopapular rash with scales and crusted lesions covering >50% of the body surface (Figure 2).

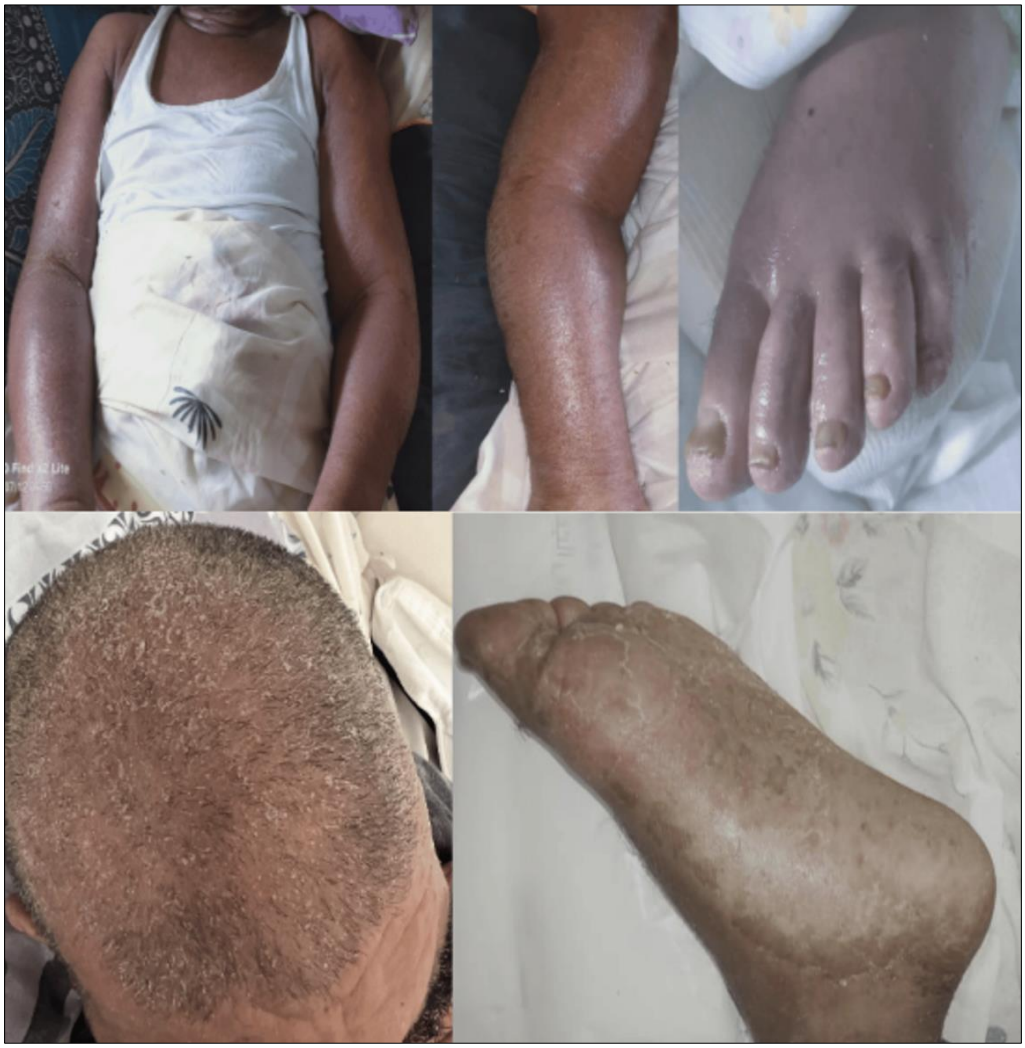

Figure 2: Maculopapular and edematous rash with overlying scales affecting more than 50% of the patient's skin surface

Blood count revealed hyper-eosinophilia (1,980/mm³), and liver function tests revealed cholestasis (Alkaline Phosphatase ALP: 180 UI/L, Gamma-Glutamyl Transferase GGT: 213 UI/L). Abdominal ultrasound revealed moderate homogeneous splenomegaly. A skin biopsy confirmed eosinophilic dermatitis. The RegiSCAR score of 7 indicated a definitive diagnosis of DRESS syndrome [1]. According to the 2018 severity classification by the French Reference Center for Severe Bullous Dermatoses and Toxidermias (FISARD), the case was classified as moderate. Antitubercular drugs were halted, and corticosteroid therapy (0.5 mg/kg/day) was initiated with antihistamines and supportive measures.

After clinical and biological improvement (Figure 3), a cautious reintroduction of antitubercular drugs was undertaken in a hospital setting. Rifampin was reintroduced incrementally, associated with levofloxacin, followed by a one-month gradual reintroduction of isoniazid. The patient tolerated the regimen and completed a one-year course of therapy without further complications.

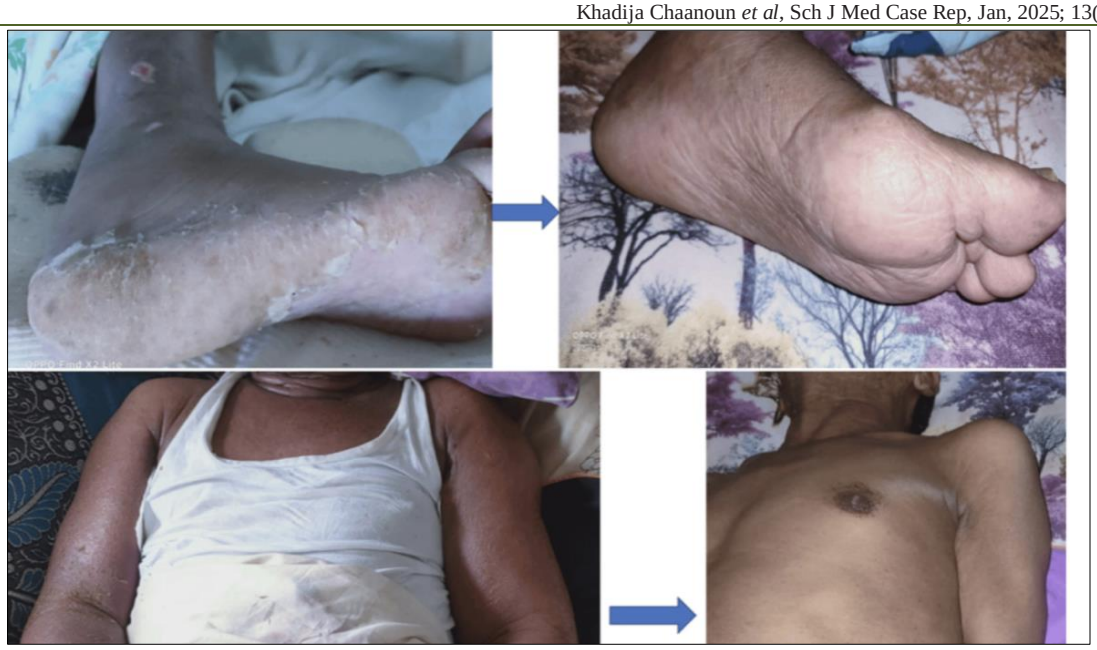

Figure 3: Improvement of symptoms after corticosteroid therapy and gradual reintroduction of antitubercular drugs

DISCUSSION

DRESS syndrome is a severe form of toxidermia with systemic manifestations that can lead to multiorgan failure. It was first observed since the early 1930s due to phenytoin. DRESS was proposed in 1996 by Bocquet *et al*., to distinguish it from other non-eosinophilic toxidermias. The incidence is of 1/1,000 to 1/10,000 exposures and the mortality rate is approximately 10% [2].

It is a delayed hypersensitivity reaction often mediated by T lymphocytes and associated with herpesvirus reactivation. This drug-virus synergy induces a cytokine storm, explaining the clinical manifestations [3]. It manifests 2-8 weeks after drug exposure and the flares are interspersed with remission periods due to viral reactivation [6-8].

Although antitubercular drugs are infrequent triggers [4], rifampin and isoniazid are the most commonly implicated agents followed by ethambutol and pyrazinamide [5].

Management involves immediate withdrawal of the suspected drug, systemic corticosteroids for moderate to severe cases, and close monitoring of organ functions [9, 10]. Sequential reintroduction of antitubercular drugs under medical supervision is critical for treatment continuity. Blood counts, liver and renal function tests are typically performed twice weekly until one month after normalization, then weekly for three months or longer. [11].

Our case underscores the significance of early recognition and the strategic management of DRESS syndrome. The successful reintroduction of antitubercular therapy ensured treatment adherence and favorable outcomes.

CONCLUSIONS

Antitubercular drug-induced DRESS syndrome is a rare but severe condition requiring prompt diagnosis and intervention. This case highlights the importance of a multidisciplinary approach, including drug withdrawal, corticosteroid therapy, and cautious drug reintroduction. Early recognition and tailored management are crucial to mitigate risks and ensure successful outcomes.

Data Availability: The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Funding Declaration: No funding was received for conducting this study.

Ethics Approval and Consent to Participate: Ethical approval has been exempted by our institution. Written informed consent for publication of clinical details and/or clinical images was obtained from the patient. This case report describes an individual patient observation and does not fall under the purview of a clinical trial or require clinical trial registration.

Consent for Publication: Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Competing Interests: The authors declare no competing interests.

Abbreviations:
DRESS: Drug Reaction with Eosinophilia and Systemic Symptoms

- **RegiSCAR**: Registry of Severe Cutaneous Adverse Reaction
- **MRI**: Magnetic Resonance Imaging
- **ALP**: Alkaline Phosphatase
- **GGT**: Gamma-Glutamyl Transferase
- **FISARD**: French Reference Center for Severe Bullous Dermatoses and Toxidermias

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