



RICKETTSIAL FEVER PRESENTING AS PURPURA FULMINANS: A CASE REPORT

Dermatology

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KEYWORDS

INTRODUCTION:

Rickettsiae primarily target vascular endothelial cells, causing febrile illness and rash in the mammalian host. Transmission is predominantly via tick bites, with certain pathogens transmitted by human body lice and mites. Presence of cutaneous lesions like eschars, skin eruptions facilitate the clinical diagnosis of the infection.¹ Purpura fulminans is a potentially fatal uncommon disorder of intravascular thrombosis and is clinically characterized by rapidly progressive hemorrhagic infarction of the skin.²

Case Report:

A 49-year-old male patient presented to us with fever and multiple purpuric rashes over the trunk and bilateral lower limbs for 1 week. Dermatological examination revealed multiple bilateral symmetrical eschymotic patches and plaques in a fern leaf pattern over both lower limbs (Figure 1) and trunk (purpura fulminans) which ulcerated (Figure 2) over a period of 3-4 days and Later the patient developed sepsis. Eschar was present over the scrotum (Figure 3).

On investigations, hemogram, peripheral blood smear and platelet count was normal at the time of admission. In a course of 2 days the platelet count reduced to 0.45 lakhs; the serum bilirubin level was normal; the liver transaminases were elevated; weil felix test was positive; Widal test positive; CRP positive (94.27 mg/L); smears of malarial parasite and Dengue antigen, antibodies were negative; the BUN & S. creatinine levels were normal. A final diagnosis of Rickettsial fever with sepsis was made.

The patient was treated with oral doxycycline. Topical applications including moisturizing lotion, mupirocin ointment was given. Later broad-spectrum antibiotic piperacillin and tazobactam was also added along with supportive measures. Minimal surgical debridement was done for gangrenous lesions over scrotum. Dressing of the ulcer was also done. The patient showed improvement within 5 days of treatment and purpuric lesions gradually exfoliated (Figure 4). On following up, the patient was doing well 2 weeks post treatment.



Figure 1: Multiple petechia and echymoses present over b/l lower limbs.



Figure 2: Multiple ulcers over bilateral lower limbs



Figure 3: Escher present over scrotum.



Figure 4: After treatment Multiple hyperpigmented macules with scales present over b/l lower limbs.

DISCUSSION:

Purpura fulminans is a heterogeneous group of disorders characterized by rapidly progressive purpuric lesions that develop into extensive areas of skin necrosis, and peripheral gangrene.^{3,4} Three forms of purpura fulminans include acute infectious, neonatal and idiopathic purpura fulminans.⁴ The most common form is acute infectious purpura fulminans. This occurs most commonly due to acute bacterial sepsis including *Staphylococcus aureus*, *Streptococci* and *Hemophilus influenza*.⁴ Rickettsial infections have been rarely associated with purpura fulminans.³ Pathogenesis involves activation of complement and coagulation pathways by endotoxins and signaling by inflammatory cytokines or endothelial dysfunction and vasculitis caused by the antigen.³ Consequently there is acute transient decrease in protein C, protein S or antithrombin III levels.⁴ Complications of purpura fulminans include disseminated intravascular coagulation, end-organ damage, septicemic shock and necrotizing fasciitis.⁴

Patient presented with above mentioned complaints to the department of Dermatology. There were a few characteristic hallmarks of the rickettsial rash: the eschar and the confluent petechial nature (fern leaf pattern) of the rash. In current case patient had all the classical features of scrub typhus. The petechial rash with predominantly truncal distribution sparing the palms, soles, unlike a spotted fever where these sites will be involved. Hence based on history, clinical features and cutaneous examination showed features of scrub typhus. The serological test used was the Weil-Felix test and got positive. The other tests that can be used and are more specific for the diagnosis of scrub typhus are the complement fixation test, the micro-IF test and PCR.

CONCLUSION:

The case is reported for the importance of the typhus group of fevers as an important differential diagnosis in cases of fever with rash and to prevent patient going towards purpura fulminans, skin necrosis and scarring which is a dreaded complication of Rickettsia.

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