ISSN: 0975-833X

Available online at http://www. journalcra. com

International Journal of Current Research
Vol. 16, Issue, 02, pp.27126-27128, February, 2024
DOI: https://doi.org/10.24941/ijcr.46651.02.2024

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

CASE REPORT

EXPANDED DENGUE SYNDROME: RARE CASE REPORT

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ARTICLE INFO

Article History:
Received 19th November, 2023
Received in revised form
18th December, 2023
Accepted 15th January, 2024
Published online 27th February, 2024

Key words:
Dengue, DIC, Purpura Fulminans, FFP, Aspirin.

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ABSTRACT

Background: Dengue fever caused by dengue virus can unlikely present as various organ manifestations including purpura fulminans and peripheral gangrene. ***Case report***: We report a case of 18 year old female with purpura fulminans with symmetrical peripheral impending gangrene secondary to DIC following dengue infection. Patient admitted in medicine ICU with complain of fever, headache, malaise, generalised erythematous rashes. On day4 patient developed blackening of both hand and feet. On detailed clinical examination and relevant investigation ,after excluding all the other causes ,we found that the cause of purpura fulminans was dengue fever. ***Discussion***: Purpura fulminans is a rare presentation of dengue fever and can be fatal. So its early identification is crucial for timely management. We managed our patient with LMWH (Enoxaparin), Aspirin and FFP and patient was dramatically improved. ***Conclusion:*** Purpura fulminans in dengue fever associated with DIC is very rare. It can lead to significant morbidity and mortality and can be fatal. By prompt diagnosis and appropriate management we can save the life of patient.

Citation: Mahesh Dave, Avinash Sharma, Deepanshu Singla, Shubhangi Gupta, and Anubha Sukhwal, 2024. *"Expanded dengue syndrome: rare case report". International Journal of Current Research, 16, (02), 27126-27128.*

INTRODUCTION

Dengue infection is caused by dengue virus (DENV), which includes four different serotypes (DENV-1, DENV-2, DENV-3, and DENV-4).(1)Dengue infection is transmitted via Aedes mosquito (Aedes aegypti & Aedes albopictus).(2) Dengue is endemic in tropical and subtropical climates worldwide. The spectrum of disease varies from mild self-limiting illness to more severe and fulminating forms, i.e., dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS).(3,4)and also unlikely can present as different organ manifestations. Expanded dengue syndrome (EDS) includes various clinical manifestations caused by dengue fever pertaining to different organ system.(5,6) Rare presentation of dengue fever has been reported with various end organ damages as EDS such as myocarditis, Cutaneous Small Vessel Vasculitis (CSVV) as purpura and medium-vessel vasculitis with peripheral gangrene.(7)Also very few cases of dengue have been reported with thrombotic microangiopathy and DIC with peripheral gangrene.(8,9) We reported a rare case presentation of Expanded dengue syndrome with purpura fulminans with symmetrical peripheral impending gangrene secondary to disseminated intravascular coagulation.

CASE REPORT

A 18 years old female patient, admitted in medical ICU in MB hospital, Udaipur with history of fever, headache , malaise for last 2 days . on day 3 patient complain of generalised erythematous rashes over limbs and trunk. On day 4 patient patient complained of severe burning sensation of both hands and feet and on next day her relative noticed blackening of both hands and feet which extended proximally upto wrist and ankle joint over the period of 2 days. Fever subsided after 5 days and rashes were also fading. On general physical examination patient was conscious and oriented to time, place and person. she had no pallor, icterus, cyanosis, clubbing, edema feet. Blanching was present and maculopapular erythematous rashes present over trunk and limbs. She was febrile (Temp. was 101 F{oral}, dehydrated (dry tongue, cold peripheries) and in hypotension. Her vitals are, Pulse rate was 120/min, Blood pressure was 70/40 mmHg, Respiratory rate was 22 breaths/min, SPO2 was 95% on room air.

Systemic examination was normal: Patient was investigated. CBC shows (WBC count 10.2 X $10^{3,}$ Hb 7.7, Platelet count is normal 2,94000/mm^3), Liver function test shows (SGOT 49 U/L, SGPT 25 U/L, ALP 56 U/L, Total bilirubin 0.43 mg/dl),

Renal function test shows (Urea 52.7 mg/dl, creatinine 1.4 mg/dl). Chest x-ray finding suggestive of bilateral costophrenic angle blunting, suggestive of bilateral pleural effusion. USG abdomen was done showing mild ascites, rest all normal. Dengue IgM was positive. MPQBC, malaria slide test and Scrub IgM was negative. On day 4 patient complain of severe burning sensation over hands and feet. On local examination extremities were warm and tender. swelling was present over both hands and feet. There were blackish purpuric patches present over palms and soles with blackish discolouration over dorsum of hands and feet extending proximally except fingertips on both sides. All peripheral pulses were palpable. We thought that either it is due to vasculitis or vasculopathy(thrombosis) causing this condition, but more likely to be vasculopathy because there were no palpable purpura suggestive of vasculitis. We started broad-spectrum antibiotics, Intravenous steroids, Enoxaparin and Aspirin. We investigated the patient accordingly. Autoimmune profile, coagulation profile and thrombophilia profile were sent. Skin biopsy was done and sent for analysis. Her colour doppler study of upper limb and lower limb vessels was normal. PT-INR was 15.3 sec. /1.14, Aptt was 39.7 sec., D-dimer was significantly raised (14900 ng/ml), FDP (fibrin degradation product) was significantly raised 372 ng/ml (normal range 0-200 ng/ml), ANA was negative (0.24 AI), Anti ds DNA was equivocal (27 IU/ml), Protein-C was normal (78%), Beta 2 microglobulin was normal (780 ng/dl). Skin biopsy reveals epidermis of skin with focal variable thickness epidermal necrosis and erythrocytic exocytosis. Dermis exhibits blood vessels, a few of them with occlusion of lumen by fibrin thrombi, mural inflammatory cells and endothelial swelling. Extravasated RBCs are noted. overall morphology is consistent with clinical diagnosis of purpura fulminans. We made our diagnosis as Expanded dengue syndrome with Purpura fulminans with symmetrical peripheral impending gangrene secondary to Disseminated intravascular coagulation. We managed the patient with IV fluids, low molecular weight heparin (Enoxaparin), Aspirin and Fresh frozen plasma. The patient was dramatically improved 48 hours after starting the therapy. Progression of impending gangrene was stopped and purpuric patches were resolving day by day. Her vitals are now stable without vasopressor support and her general condition has improved. The repeat platelet count was 1,67000/mm^3, Liver and renal function tests were normal. D-dimer was decreasing (3600 ng/ml) and PT-INR was normal. We discharged our patient on day 10, kept on anticoagulant and aspirin and asked to follow up after 7 days.

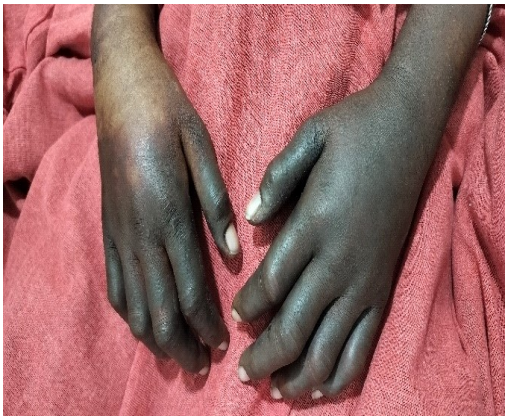
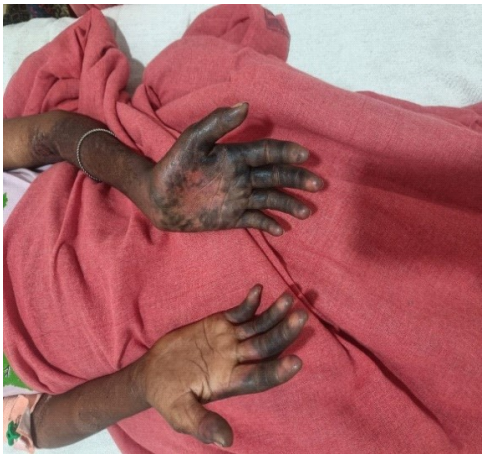


Fig. 1. On day 4 of dengue fever



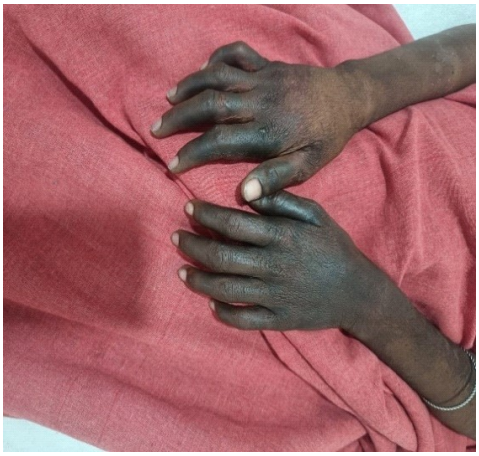
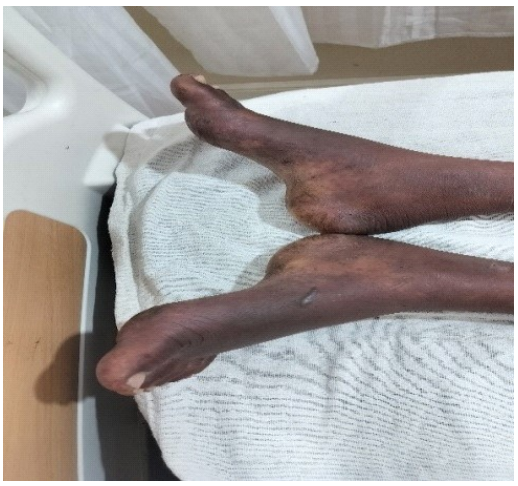
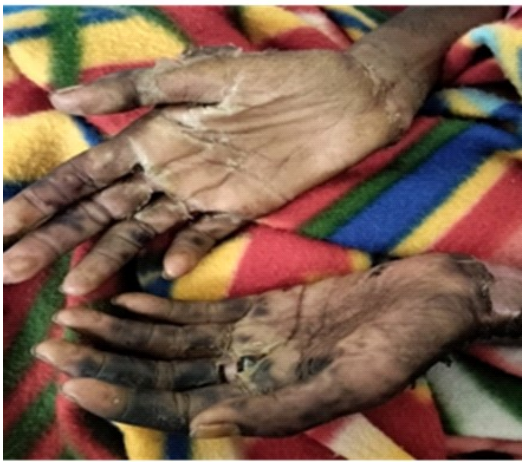
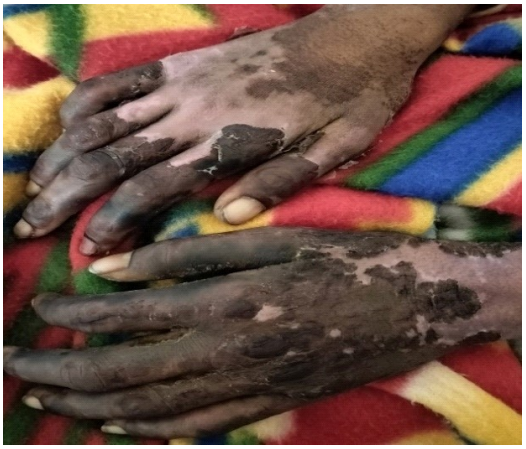


Fig.2. After 1 week (on day 10 of dengue fever)







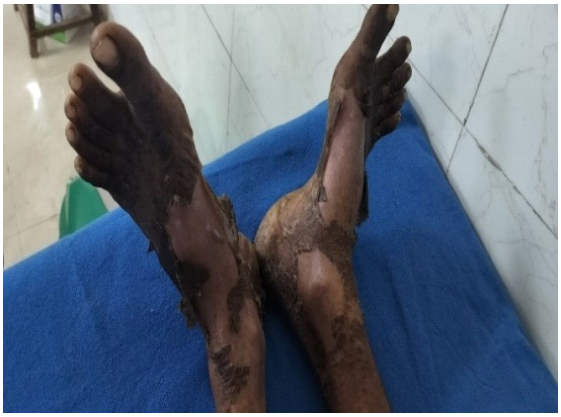


Fig.3. After 2 weeks (on day 18 of dengue fever)

DISCUSSION

Symptoms of dengue fever include fever, severe headache, joint and muscle pain, fatigue, rash etc. Dengue can present in various forms, from mild asymptomatic to severe forms such as dengue hemorrhagic fever, dengue shock syndrome including different organ manifestations. Purpura fulminans is an acute purpuric rash characterized by coagulation of the microvasculature leading to skin necrosis, gangrenous changes of limbs or digits and organ dysfunction..It is rapidly progressive and is often accompanied by disseminated intravascular coagulation and circulatory collapse. It is a manifestation of a systemic disease. It is divided into 3 forms based on etiology: Neonatal due to inherited deficiency of protein C and protein S, acute infectious form during an acute illness due to sepsis and idiopathic post-infectious form. After excluding all the other possible causes by history, physical examination and investigation,we made our diagnosis as Expanded dengue syndrome with purpura fulminans with symmetrical peripheral impending gangrene secondary to disseminated intravascular coagulation, favoured by raised D-dimer, raised FDP and skip biopsy.

We managed our patient with adequate hydration with IV fluids, LMWH(enoxaparin), Aspirin and Fresh frozen plasma(FFP). The patient was dramatically improved after 48 hours of starting the treatment and further progression of impending gangrene was stopped with resolution of purpuric patches day by day. We discharged our patient on day 10, kept on anticoagulant and aspirin and asked to follow up after 7 days.

This is a rare case presentation of dengue fever associated with purpura fulminans leading to impending peripheral gangrene secondary to disseminated intravascular coagulation.

CONCLUSION

Dengue infection can manifest as mild form to very severe form including EDS. Purpura fulminans with impending peripheral gangrene with acute shock syndrome secondary to DIC is an uncommon manifestation in dengue and can be fatal, also can associated with significant morbidity later such as amputation of limb if gangrene is fully developed. So with early identification and timely management, we can decrease the mortality and morbidity in such patients.

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