International Journal Dental and Medical Sciences Research
Volume 5, Issue 1, Jan-Feb 2023 pp 280-282 www.ijdmsrjournal.com ISSN: 2582-6018

Gangrene- An Uncommon Complication in A Case of Rickettsial Infection

Dr. Vanama Lakshman Sai[1], Dr. Mahesh M[2],Dr. Ankit Singh[3,]
Dr. Harshitha Ravikumar[4]

Junior Resident[1,3,4],Department of General medicine JSSMedical College,JSSAHER,Mysuru Karnataka,India.

Corresponding author:Dr. Mahesh Mahadevaiah[2], Professor, JSS Medical college, Mysuru.

Submitted:17-01-2023 Accepted: 30-01-2023

ABSTRACT:
Rickettsial diseases comprise a wide spectrum of diseases which are reported fromdifferent parts of India. A higher index of suspicion, clinical awareness and proper use of available diagnostic tools would increase the frequency of diagnosis. Gangrene is an uncommon complication in Rickettsial fever. Extensive gangrene of the digits or whole limb, even requiring amputation has been reported with Rocky Mountain spotted fever in literature. In the following case report, we present a case of middle- aged man who was successfully treated for gangrene of digits and skin manifestations due to Rickettsial infection, prompt diagnosis could can save patient from amputation.

KEYWORDS: Doxycycline, Necrosis, Weil Felix test, purpura fulminans.

I. INTRODUCTION

Scrub typhus is an acute, febrile zoonosiscaused by an obligate intracellular bacterium Orientia tsutsugamushi. The disease is of greatest public health importance in our rural areas of India and Asia. The clinical manifestations of the disease range from subclinical disease to an organ failure. The various complications known with this disease are jaundice, renal failure (1), pneumonitis, acute respiratory distress syndrome, septic shock, myocarditis, vasculitis, and meningoencephalitis. The complications are varied skin manifestations fromEschar,Petechial rashes, Subcutaneous painful gangrene patches andPurpura Fulminans (3).

Here in we describe the case of young male farmer who had history fever and with discoloration and pain of multiple upper limb and lower limb digits.Serological test like Weil Felix and Scrub typhus IG M yield the diagnosis and earlier initiation of definitive treatment with Doxycycline prevented this patient from amputation of fingers.

II. CASE REPORT

A 53-year-old male patient came with the complaint of Fever for last 5 days, he also noticed bluish discoloration of upper limb and lower limbwith brownish colored skin changes seen on both legs and right ear lobe and rashes over both legs for 2 days. On examination, the patient had fever of 100 F with Pulse rate -88 bpm. OnExamination rash resembled widespread fern-leaf pattern necrotic skin rash with tenderness(figure -2) with evidence of vasculitis on the palms and soles. Bluish black discoloration of fingers suggestive of gangrene (Figure -1)associated with pricking type of pain present over Left index Middle, Little finger and right little finger, right leg – third toe. Examination of all other systems wasnormal, and no lymphadenopathy on examination.

Investigations showed CBC showed Hemoglobin was 13.6 gm/dl, total leucocyte count was 12,300 cells per cubic mm, platelets 1.54 lakhs/cubic mm.

Liver function tests were SGOT-32U/L, SGPT-27U/L, ALP-151U/L, Total bilirubin- 0.6mg/dl, direct bilirubin-0.2mg/dl, S. Albumin-3.2g/dl.

Renal function tests were blood urea-37gm/dl, Serum creatinine-0.86mg/dl.

Sodium was 129meq/liter and potassium was 5.1meq/liter.

Onworkup for autoimmune causes ANA, Anticardiolipin and lupus anticoagulant were negative.

Bilateral upper limb arterial Doppler was normal and bilateral arterial lower limbs Doppler was suggestive of left dorsalis pedis artery thrombosis.

Fever workup on day of 5 illness showed Weil Felix negative with titer less than (1:80)and repeat Weil Felix was done after 1 week, patient was found to have raised titers of Weil Felix (1:320) with Scrub typhus IG M antibody was positive.

Workup for other Tropical infections, serology and Blood cultures were negative. ECHO- Normal.

International Journal Dental and Medical Sciences Research
Volume 5, Issue 1, Jan-Feb 2023 pp 280-282 www.ijdmsrjournal.com ISSN: 2582-6018

Dengue Ns1 Ag, IgM, Widal, Leptospira Ig M - Negative.
On ultrasound hepatomegaly was noted 15.5cm.

Figure-1-Initial Presentation (Before Treatment)
Bluish discoloration of fingers- S/o Ischemia

Figure -2-purpura fulminans
Brownish coloured lesion s/o dermal and subcutaneous necrosis.

Figure -3- (post treatment)
Scaling of dead skin with healing .

Figure -4- (Post treatment)
Completely healed skin necrosis with Hypopigmented patches.

III. DISCUSSION:

This case presented to our hospital during covid pandemic in view of suspicion of covid 19, Covid 19 RTPCR was done which was negative.Scrub typhus is widespread in Indian subcontinent. With the involvement of multiple

organs, with varying severe complications may develop, which could make it a fatal disease. Endothelial cells and macrophages are the main target cells for O tsutsugamushi. It disseminates into multiple organs through endothelial cells via hematogenous and lymphatogenous routes and predominantly locates in the macrophages of the liver and spleen. The bacteria then cause focal or systemic vasculitis and perivasculitis in multiple organs, with various complications. Complications are seen in those patients who are left untreated in theirfirst week of illness. While going through the literature, we found out that not many cases have been reported in adults

The various complications known to occur with this disease are acuterenal failure, acutehepatic failure, interstitialpneumonitis, acute respiratory distress syndrome, septic shock,myocarditis, pericarditis, meningoencephalitis, and acute hearing loss.

Due to its pathophysiology which involves endothelial dysfunction of small blood vessels it is a multiorgan disease, and this forms the basis for systemic vasculitis (2). Sometimes, Vaso-occlusion due to venous thrombosis may also lead to development of vasculitis as reported in this case. Digital gangrene involving all digits of four limbs is a sign of systemic disease, such as infections like syphilis, leprosy, endocarditis, viral (hepatitis B, hepatitis C, human immunodeficiency virus), fungal, and parasites with risk factors, such as hypertension, diabetes, dyslipidaemia, atherosclerosis has become the leading causes of peripheral arterial disease. Vasculitis and thrombophilic states should be ruled out in all cases of digital gangrene. In primary systemic vasculitis, medium-sized vessel is commonly involved, such as polyarteritis nodosa, which is associated with hepatitis B, Wegener's granulomatosis, Churg–Strauss syndrome. Though uncommon, large-size vessel vasculitis can also lead to digital gangrene, such as giant cell arteritis and Takayasu arteritis. Digital ischemia is very commonly associated withsystemic lupus erythematosus. Similarly, RA, scleroderma, antiphospholipid syndrome, Raynaud's phenomenon are well-known causes of vasculitis digital ischemia and should be kept in mind. Bechet's disease is also associated with digital gangrene. All possible causes whether infective or noninfective were ruled out eventually, we reached out to a conclusion that scrub typhus has led to digital gangrene in this patient with painful subcutaneous necrosis of skin and the important things to observe is first week of serological test could be negative if strong suspicion is there it is advised to repeat Weil Felix and to look into raise in titres which has more sensitivity and specificity as observed in our case.

On further looking retrospectively we identified the patient has hyponatremia on presentation

On search with available literature, it is identified that Rickettsial fever patient has hyponatremia (4) in 56 % population in first one week of clinical symptoms secondary to varied mechanisms leading for hyponatremia such as SIADH, Rickettsial vasculitis leading to capillary leak syndrome and results in hyponatremia, may be used as marker in limited diagnosticlaboratoryfacilities.AwarenessoftheexistenceofRickettsial infectionwillalsopreventexcessinvestigationsin patientswithfeverofunknownsourcesandlowerstheeconomicburdentofamilies.

IV. CONCLUSION

Scrub typhus is a reemergent zoonosis disease in the Indian subcontinent. Vasculitis is one of the dreaded complications of scrub typhus, which can lead to digital ischemia and then gangrene. Proper evaluation and early and prompt treatment can lead to effective control of its complication.So while dealing with digital gangrene in with no other causes found one should be aware of scrub typhus infection and should be kept in mind and treat with doxycycline and anticoagulants will be helpful in management of gangrene cases and avoid amputation in certain cases when treated early.

REFERENCES

[1]. Cracco C, Delafosse C, Baril L, Lefort Y, Morelot C, Derenne JP, Bricaire F, Similowski T. Multiple organ failure complicating probable scrub typhus. Clin Infect Dis 2000 Jul;31(1):191-192.

[2]. Suja L, Krishnamoorthy S, Sathiyan S, Sivanandam S, Koushik AK. Scrub typhus vasculitis causing pan digital gangrene Int J Case Rep Images 2015;6(7):416–421.

[3]. Dalugama C, Gawarammana IB. Rare presentation of rickettsial infection as purpura fulminans: a case report. J Med Case Rep. 2018 May 26;12(1):145. doi: 10.1186/s13256-018-1672-5. PMID: 29801512; PMCID: PMC5970498.hh

[4]. Hullatti C, Latha GS, Babu VBV.Hyponatremia: a diagnostic marker for the diagnosis ofRickettsial diseases. Int J Contemp Pediatr2017;4:696-9.