

Niacin/Zinc Deficiency Presented as Necrotising Acral Dermatitis in Decompensated Liver Disease Patient

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Abstract

We hereby describe a case of a 65-year-old male who has treated for DCLD, came with bilateral symmetrical lesions (blebs with rupturing) on both lower limbs and foot. Investigations revealed low niacin and zinc levels and histopathology revealed hyperkeratosis, parakeratosis, acanthosis and perivascular mononuclear cell infiltrate. A diagnosis of pellagra with concomitant zinc deficiency with Necrolytic acral dermatitis was done for our patient. Necrolytic acral dermatitis is thought to be a reliable diagnostic marker of Hepatitis C infection(1). He was found to be seronegative for HCV infection, the patient showed a dramatic response to Niacin and Zinc therapy. Very few cases of seronegative Necrolytic acral dermatitis associated with micronutrient deficiency have been reported, which prompted the present report(2)

Case Report

A 65 Years old male shopkeeper, non-diabetic, non-hypertensive, known case of Decompensated Liver disease of Alcoholic etiology for 1 year, Now presented with fluid-filled lesions over both Lower limbs which are rupturing with a duration of 3 days (3). No history of Trauma. and family history was unremarkable. past medical history for decompensated liver disease was contributory. On Examination his BP was 110/70mmhg, PR-92/min. And he was having extensive skin lesions in the form of blebs which were rupturing and discharge was serous type over bilateral extensor and flexor aspect of both Lower

limbs and dorsum of the foot(5). on examination, the abdomen was distended with no warmth and tenderness and no hepatosplenomegaly with fluid thrill and shifting dullness. Other systems were clinically normal.



Based on history, Clinical examination, and Histopathology, Diagnosis was made as PELLAGRA and concomitant ZINC deficiency with acral necrotizing dermatitis(6,7). The patient was put on Vit B3 and other B complex vitamins and Zinc sulfate tablet 50mg twice daily. for 10 days the response of the patient was dramatic and the wound also started healing. At the end of 4 weeks, the lesions had completely healed with residual hyperkeratosis

Discussion

Our case is interesting because though micronutrient deficiency is well known entity in Decompensated liver disease patients, Overt manifestations in the form of profound skin lesions are not seen regularly.

Pellagra means rough skin, initial erythematous lesions will be painful. the eruption usually begins as acute dermatitis with edema, burning and pruritis. then eventually erythema becomes cinnamon brown colour which will be symmetrical. blisters appear after the onset of erythema, blisters may coalesce into Bullae and then break. in late stages dermatosis becomes hard, rough, cracked, blackish and brittle. The skin may look like goose, hence the name goose skin.

The physicians should have a keen eye in detecting treatable conditions which may be secondary to major manifestations like DCLD.

In our case, the micronutrient deficiency was suspected and confirmed at the right time and the patient's limbs were salvaged because of the institution of apt therapy at the right time.

Conclusion

In this report, our patient was found to be seronegative for anti HCV antibodies. Skin lesions over lower limbs were not responding to conventional antibiotics. hence in the absence of HCV infection,

Micronutrient deficiency was contemplated of which NAD and Niacin/Zinc deficiency topped the list. The clinical suspicion was confirmed with laboratory investigations with low levels of Niacin/Zinc Patient was put on 150mg of Niacin BD for 15 days with 50mg of Zinc orally everyday along with other micronutrients. The patient showed dramatic response with resolution of skin lesions in 10 days(8). and the patient discharged with supplementary therapy. It is a well-known fact that NAD reflects underlying HCV infection. As patients with DCLD will have micronutrient deficiencies. skin lesions in DCLD due to micronutrient deficiency have to be carefully evaluated. clinicians need to be aware of

micronutrient deficiencies in patients with liver diseases. our case adds to the literature of very few cases of micronutrient deficiencies with NAD. To the best of our knowledge, less than 5 cases of seronegative NAD, and association with zinc had been reported and Nil reported association with Niacin and combination with zinc deficiency in India, Thus inciting us to report the case.

Investigation	result
tc	10,000 cells/cubmm ³
esr	12/30
hb	11 g/dl
Platelets	2,50,000
Urea	38
Creatinine	1.2
lft	Normal
Serum electrolytes	Na+=136.4 K+=3.65 Cl- =98.3
Ascitic fluid analysis	Exudative fluid with no spontaneous bacterial peritonitis
Serum niacin	0.20(low)
Serum zinc	30 mcg/dl
Hcv Hep-b Hiv	Negative
Potassium hydroxide mount of scrappings from lesions	No fungal hyphae
Histological examination	Hyperkeratosis, parakeratosis, acanthosis, spongiosis,

References

1. Principles of internal medicine- Harrison 20th edition.
2. Necrolytic acral erythema in the absence of hepatitis C infection-Anupam Das, IJD, 2016, Volume-61

3. Necrolytic acral erythema masquerading as cellulitis-
Iyengar, Sanjana, Dermatology online journal, 2014,
volume 20
4. Mahmoud A. Abdallah, Arch Dermatol.2005;141(1):85-
87
5. DelaporteECatteauBPiette F Necrolytic migratory
erythema like eruption in zinc deficiency associated with
alcoholic liver disease Br J Dermatol 1997;1371027-1028
6. MichaelssonGLjunghall K patients with dermatitis
herpetiformis, acne, psoriasis, and Darie's disease have
low epidermal zinc concentrations Acta Dermvenereol
1990;70304-308
7. Mori HMatsumotoYTamadaYohashi M apoptotic cell
death in formation of vesicular skin lesions in patients
with acquired zinc deficiency J Cutan Pathol
1996;23359-363
8. Khanna VJShiehSBenjamin J et al. Necrolytic acral
erythema associated with hepatitis C; effective treatment
with interferon alfa and Zinc Arch Dermatol
2000;136755-757

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