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Case Report

Unusual concurrence of pyoderma gangrenosum and HCV infection: A case report

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Abstract Pyoderma gangrenosum, an inflammatory dermatosis, having a rare occurrence of 3-5 per million population has known to be associated with some of the underlying systemic diseases in about one-half of the cases. Its association with HCV, although contemplated, has rarely been reported in literature. Hepatitis C viral infection can present with varied extrahepatic manifestations. Case reports and studies, although few associates pyoderma gangrenosum as one of its extrahepatic-manifestation. We present one such case of pyoderma gangrenosum where HCV infection is suspected to be the underlying cause. This case report is expected to help amplify such evidences.

Key words
Pyoderma gangrenosum, neutrophilic dermatosis, hepatitis-c viral infection.

Introduction

Pyoderma gangrenosum (PG) is pathological condition in which sterile dermal neutrophilic incursion results in formation of a pustule, nodule or plaque which further develop into a rapidly progressing chronic, destructive deep painful ulcers with undermined borders.[1]

Pyoderma gangrenosum is correlated with certain systemic diseases in about 25-50% of cases namely inflammatory bowel disease, HIV, malignancies, autoinflammatory diseases and hepatic viral infections while the other half of the cases are still considered idiopathic in essence.[2]

Pyoderma gangrenosum pose great difficulty in its diagnosis due to non-specific histopathological findings therefore scrutinizing other causes of cutaneous ulcerations via thorough examination and investigations is prudent.[3]

In chronic hepatitis C infection (HCV), although rare, Pyoderma gangrenosum has been found to be one of its extrahepatic cutaneous manifestations with only a handful of reported cases till present.

We report one such case of pyoderma gangrenosum with associated Hepatitis C infection, thereby adding to the already reported but only few cases.

Case Report

A 45-year-old female presented with painful non-healing ulcers over right shin, medial malleolus and upper outer quadrant of left buttock since 6 months. 7 months ago, she noticed a single pustule over her right shin following trauma, which ruptured in next 4-5 days leaving behind an erosion which progressed in size and depth in next 20 days resulting in a painful ulcer. Similar lesions developed over lateral malleolus and then left buttock in the next 1 month, for which she took various treatments from multiple practitioners

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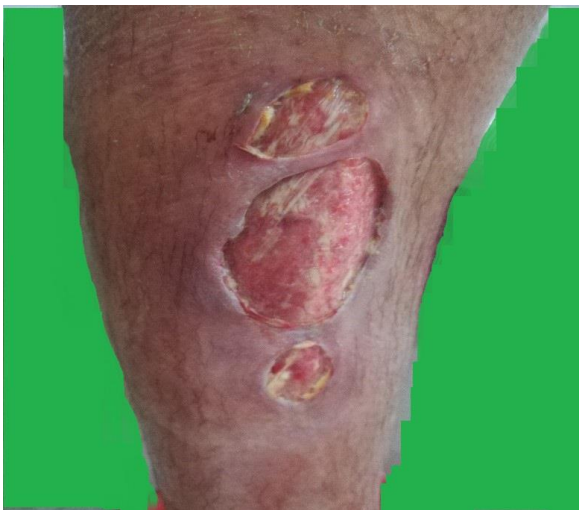

Figure 1 On day of presentation ulcers with undermined borders and erythematous margins seen on shin area of right foot.

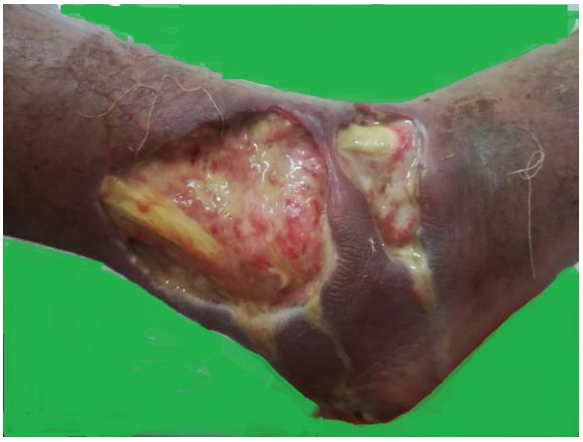

Figure 2 On day of presentation ulcers with undermined borders and erythematous margins oozing yellow coloured thick purulent fluid seen on area of lateral malleolus of right foot.

(details unavailable) for about 5 months with no relief. There was no prior history of similar lesions. Systemic symptoms such as fever (on and off), polyuria, polydipsia, gradual blurring of vision were present while cough, chest pain, breathlessness, abdominal pain, bowel bladder disturbances and weight loss were absent. There was no history suggestive of drug allergy. On physical examination, four well-defined rapidly growing deep ulcers of size varying from 3x6x2 cm to 8x12x4 cm covered with dirty granulation tissue having indurated base with tendons and muscles visible along with erythematous to violaceous rim and undermined margins were present over shin and lateral side of right lower limb **(Figure 1 & 2)**. Tenderness was present on palpation and there was thick foul-smelling yellow colored pus oozing from the ulcer site. Another well-defined ulcer covered with black colored eschar 15x10 cm in size with well-defined regular violaceous margins was present over upper outer quadrant of left buttock **(Figure 3 & 4)**. Pathergy test was negative. Systemic examination was consistent with moderate hepatomegaly on per abdomen palpation with regular margins, firm in consistency, extending 1 hand-span below the right coastal margin. Peripheral pulses were palpable in both lower limbs. Sensations of touch, pain and pressure were over extremities were intact.

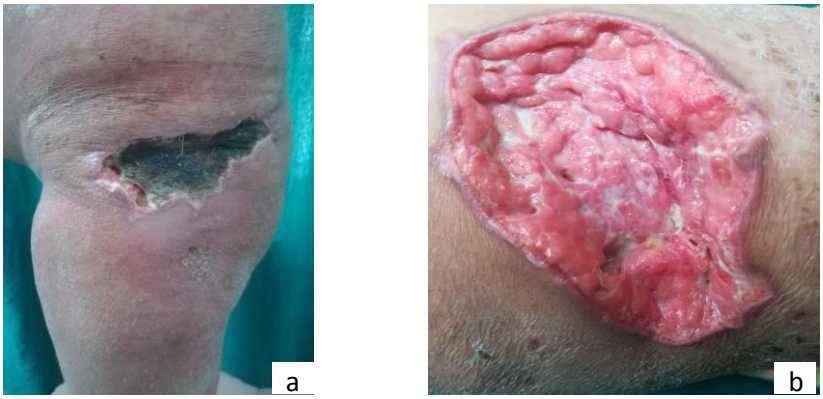

Figure 3 a). On day of presentation ulcer was also present on left buttock region covered with black eschar. b). The same ulcer present on left buttock region after removal of eschar.

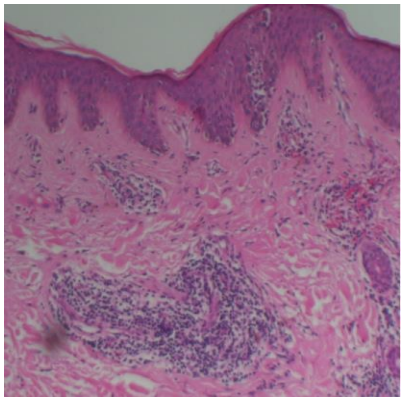

Figure 4 Elliptical biopsy sample sent for HPE from the ulcer margin showed presence of dense acute and chronic inflammatory infiltrate

Investigations revealed that the patient was anemic (hb-5.4 gm/dl), HCV reactive with a viral load of 12,98,716 not on treatment and newly diagnosed to be diabetic with HbA1C-10.8%. Her total TLC count was raised (TLC-18,000). Urine examination revealed proteinuria and glucosuria. Thyroid function test was within normal limits. Color doppler was done to of bilateral lower limbs to obviate any arterial or venous cause of ulcerations which showed normal findings. ANA profile of the patient was negative and DIF sent from perilesional skin of the ulcer was unremarkable. Ophthalmic examination revealed advancing cataract in concordant eyes and on ultrasonography hepatomegaly was present. Pus sample was sent for gram staining, culture and sensitivity testing which showed vacuous findings. Elliptical biopsy sample sent for HPE from the ulcer margin showed presence of dense acute and chronic inflammatory infiltrate along with other non-specific findings suggestive of Pyoderma gangrenosum. Patient was managed conservatively with steroids, antibiotics and antiviral treatment with marked improvement.

Discussion

Pyoderma gangrenosum is among one of the rarely occurring clinical entity with meagre incidence of only 3-5 per million people per year.[1]

Prevalence of PG is mostly seen in middle aged adults, usually in their 4th decade, with slight female preponderance. However, its manifestation shows no age barriers.[4]

Co-habitation of PG and Hepatitis -C viral infection have rarely been reported in literature ever-since.[5]

Patho-mechanisms leading to impairment in immunoregulation, variations in genetic makeup and altered immunological functions in both the conditions may support their co-occurrence.[6]

Smith *et al*. was the first to report a case of chronic hepatitis C infection with associated pyoderma gangrenosum.[7]

A case was reported from Japan where on the basis of high suspicion of PG being associated with HCV, a patient was treated with antivirals. In this case, HCV infection eradication resulted in healing of Pyoderma gangrenosum ulcer without the need of any immunosuppressive medications.[8]

Although there is paucity of data but similar reported cases worldwide insist us to ponder on the association of these two clinical entities.[8-10]

It has been put forward that in chronic HCV disorder receptiveness is present among intrinsic and virus antigens which may cause immune reactions, enhanced B- lymphocyte stimulation by virus particles leading to B cell expansion and autoantibody production along with circulating immune complexes which may result in lesions resembling pyoderma gangrenosum.[10]

Kondo *et al*. also demonstrated that hepatitis virus infection having extrahepatic manifestations have higher blood levels of Th-17 as compared to patients with chronic virus infection limited to hepatic manifestations thus adding to substantial knowledge of role of immunology in conditions with associated PG like lesions.[10]

These findings point towards less reported but probable possibility of HCV infection as a cause of pyoderma gangrenosum synchronising with the case report presented by us.

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