Vasculitis as a presenting manifestation of hepatitis B virus infection: a case report

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Introduction

Hepatitis B virus is responsible for causing hepatic complications like acute and chronic hepatitis, cirrhosis and hepatocellular carcinoma and also some uncommon immune mediated extrahepatic manifestations. Vasculitis remains an uncommon extrahepatic complication of hepatitis B virus infection. Herein we report a case of hepatitis B infection that presented with leucocytoclastic vasculitis as an initial manifestation and managed successfully with antiviral therapy.

Keywords: extrahepatic manifestations, leucocytoclastic vasculitis

Case report

A 25-year-old previously well, married female, presented with one week history of fever, and asymptomatic rash on lower limbs. She also had constitutional symptoms, arthralgia and poor appetite. There was no history of cough/shortness of breath/haematuria/abdominal pain/loose stools/weight loss/jaundice or recent history of any drug intake. She didn't have any history of blood transfusion, high-risk behaviours or foreign visits. She was married for 1 year and did not have children. Her husband worked abroad for last five years.

On examination she was febrile and ill looking but hemodynamically stable. There was multiple palpable purpura (Figure 1,2) on both lower limbs up to thighs suggestive of small vessel vasculitis. She didn't have any oral or genital ulcers, jaundice, or bleeding manifestations. Abdomen was soft but mild tenderness over right hypochondrial area was noted without hepatomegaly or spleenomegally. The rest of the systemic examination was normal.

Investigations revealed: normal complete haemogram, renal functions, urine examination, and coagulation profile. Anti nuclear antibody was negative and Blood picture was normal. Inflammatory markers were slightly elevated with ESR-61, CRP-24.

Liver enzymes were markedly elevated (AST=1052U/L; ALT=646U/L); viral serology of heparitis A and Anti HCV were negative.

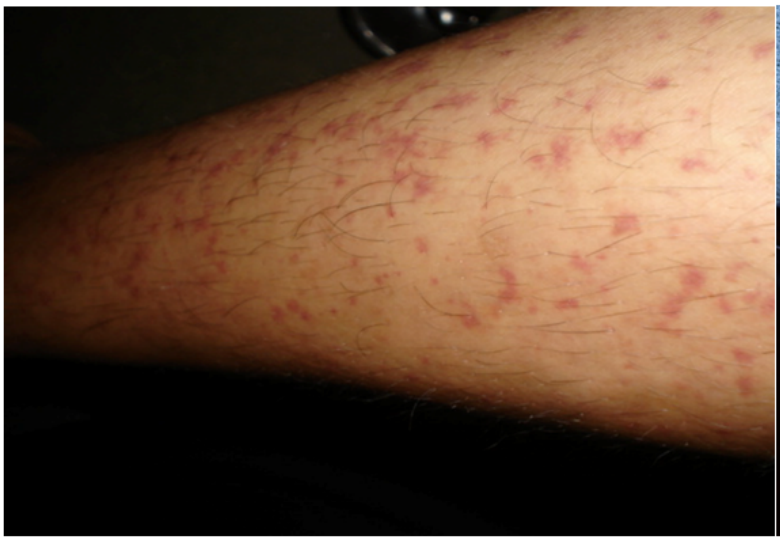

Figure 1.

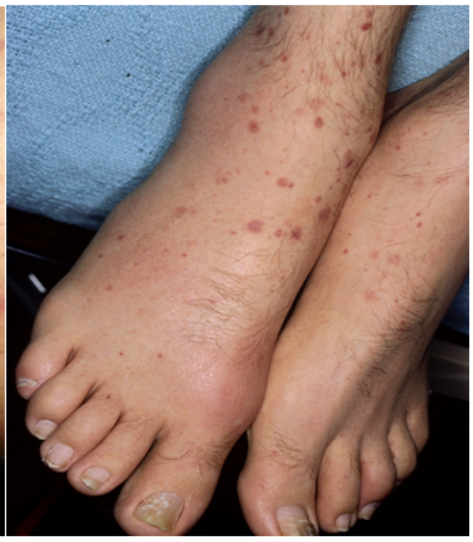

Figure 2.

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Hepatitis B profile was abnormal: HBsAg Positive; Anti HBc antibody total was raised (6.51 U/ml), HBV DNA was highly raised ($3x10^8$ IU/ml), HBeAg was positive.

USS abdomen was suggestive of acute hepatitis.

Biopsy from skin lesions revealed perivascular lymplocytes and neutrophil infiltrates, vascular endothelial swelling, extravasation of red blood cells and leucocytoclasia suggesting leucocytoclastic vasculitis (LCV) (Figure 3,4).

ASOT-negative, Mycoplasma antibodies, EBV, CMV antibodies were negative. HIV screening and VDRL were negative. Cryoglobulins were not detected.

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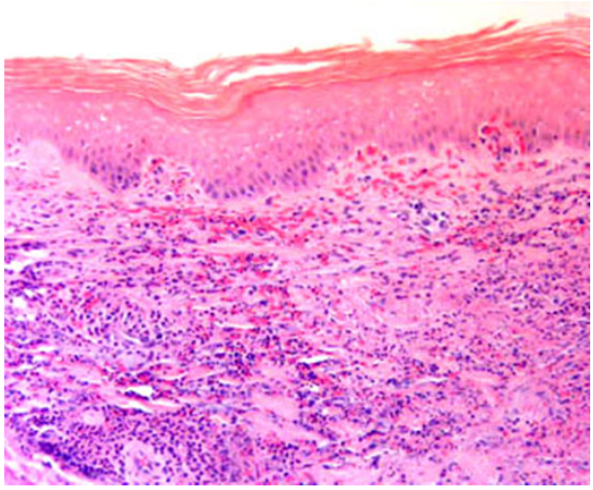

Figure 3.

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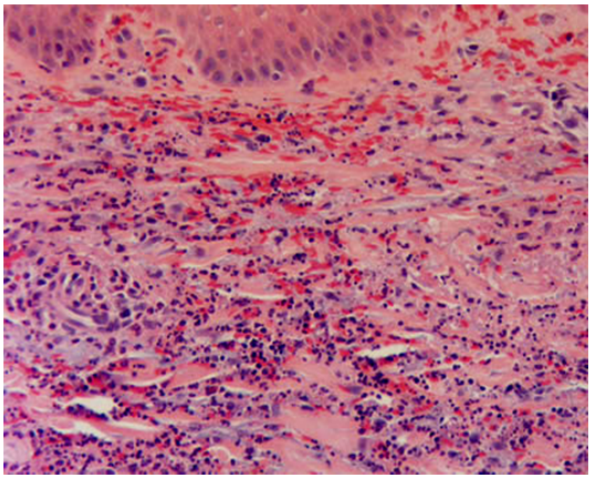

Figure 4.

After excluding other possible causes of LCV such as HCV, mycoplasma infection, autoimmune disorders, cryoglobulinaemia and lymphoproliferative disorders by relevant investigations as stated above, diagnosis of chronic active hepatitis B associated LCV was made.

Acute hepatitis was managed with IV NAC 150mic.g/hr, ursodeoxycholic acid and thiamine after obtaining the gastroenterology opinion and then followed by oral tenofovir 25 mg per day for viral hepatitis along with oral prednisolone 30 mg per day for vasculitis. With the treatment, patient showed significant improvement in her symptoms. Two months after the treatment, his serum HBV DNA was undetectable and his vasculitis settled without any fresh skin lesion.

The dose of prednisolone was gradually tapered with the response.

Discussion

HBV is persistent viral infection in human and it is transmitted via blood and the sexual contact. Globally, nearly 360 million people are chronically infected with HBV and 600,000 die each year from HBV-related liver disease or hepatocellular carcinoma[1]. Acute or chronic HBV infection cause various extra hepatic manifestations predominantly through an immune complex mediated mechanism, which leads to aggregation of platelets and activation of Hageman factor, initiating inflammatory reactions and microthrombi formation[2]. These immune complexes are deposited mainly in small arterioles, renal glomeruli and the synovial of joints and clinically manifest as vasculitis, nephritis and arthritis[3]. Vasculitis is one of the the most serious and uncommon extra hepatic manifestation of HBV infection[4]. Vasculitis associated with HBV infection can be polyarteritis nodosa[2], cryoglobulinaemic vasculitis[5] or leucocytoclastic vasculitis[4].

Polyarteritis nodosa (PAN) is an uncommon but life threatening complication of chronic HBV infection, and affects the small and medium-sized vessels[2]. It usually presents with constitutional symptoms, arthralgia, mononeuritis multiplex, hypertension and subcutaneous skin nodules, but characteristically does not involve lungs. HBV related cryoglo-bulinaemic vasculitis (CV) is also uncommon and usually associated with other clinical features of cryoglobulinaemia (arthralgia, glomerulonephritis). The serological findings of CV include mixed cryoglobulins (IgM and/or IgG), RF positivity and frequent low C4[5,6].

Leukocytoclastic vasculitis (LCV) is the most common form of vasculitis of the skin and usually results from the deposition of immune complexes in the wall of small vessels[7,8]. It presents as palpable purpura on dependant areas and can be idiopathic or occur as a secondary phenomenon. Commonly, infectious (bacterial, viral) and non-infectious diseases such as autoimmune connective tissue disorders, malignancies and drugs) can produce LCV[8]. LCV due to HBV infection is very rare, and only few cases have been reported[4,9,10]. The disease can be confined to the skin (cutaneous) or it can affect many different organs of the body such as the kidneys, nervous system, heart, gastrointestinal tract, and lungs. Systemic involvement is generally associated with a severe disease course. Differential diagnosis includes Henoch-Schönlein purpura (HSP), which has IgA as the dominant immunoglobulin in immune complexes. LCV due to IgG or IgM immune complexes carries better prognosis than HSP because of lesser systemic manifestations. Patients having mild disease usually has good prognosis and hence do not need aggressive immunosuppressive therapy[7]. Treatment of underlying cause and symptomatic treatment is sufficient to treat mild disease. In severe disease with internal organ involvement or recurrent cases or chronic cases, should treat with systemic corticosteroids and immunosuppressive agents[7].

Management of HBV related LCV includes antiviral agents to reduce the antigenic load and immunosuppressive agents e.g. steroids or cyclophosphamide, to control the immune complex formation to reduce inflammation. However, treatment with steroid and immunosuppressive agents alone may worsen the hepatic disease because it can enhance the viral replication. Therefore, concurrent use of immunosuppressant and antiviral agents is recommended[4].

Majority of reported cases of HBV related leucocytoclastic vasculitis also had associated HBV related liver disease and other extra hepatic manifestations like cryoglobulinaemia, either before or at the time of presentation[4,9,10]. But our case presented with leucocytoclastic Vasculitis as the initial manifestation of HBV infection and it is very rare in the literature.

Conclusion

Chronic antigenaemia in HBV infection can lead to immune complex formation and deposition around small cutaneous vessels causing leucocytoclastic vasculitis. Antiviral therapy alone with a course of steroids is effective against HBV-associated vasculitis. The report also highlights that viral hepatitis screening should be highly imperative in all patients presenting with cutaneous vasculitis.

References

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