Lichen planus secondary to hepatitis B vaccination

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ABSTRACT

The association of lichen planus (LP) with liver diseases is now well established. Recent reports suggest that the hepatitis viruses may play a central role in this association. Lichen planus following hepatitis B vaccination is much more unusual. A 19-year-old previously healthy male developed itchy violaceous papules and plaques over the upper extremities eight to ten days after the first injection of hepatitis B vaccine. He developed similar lesions over the upper trunk, neck and lower leg after the second and third injections. A skin biopsy showed a lichenoid tissue reaction. Direct immunofluorescence (DIF) showed multiple colloid bodies and a strong continuous ragged basement membrane zone (BMZ) band with fibrinogen. HbsAg by ELISA and anti-HCV antibodies were negative. The patient was treated with oral steroids and the lesions improved. LP is a pruritic inflammatory dermatosis of unknown origin. An increased prevalence of liver disease in patient with LP has been reported. Since the first case reported by Rebora in 1990, about 15 cases of LP occurring after hepatitis B vaccination have been reported in the literature irrespective of the type of vaccine used.

KEY WORDS: Lichen Planus, Hepatitis B vaccination

INTRODUCTION

Lichen planus (LP) is a pruritic inflammatory dermatosis of unknown etiology. It has been associated with different types of liver diseases. Recent reports suggest the role of hepatitis virus in this association. Lichen planus following hepatitis B vaccination has been reported.

CASE REPORT

A 19-year-old previously healthy male developed itchy violaceous papules and plaques over the forearms eight to ten days after the first injection of hepatitis B vaccine. (Figure 1). Similar lesions appeared over the trunk, neck and lower extremities after the second and third injections. There was no history of recent illness or infection or drug intake prior to the onset of lesions. Multiple violaceous papules and plaques were present over the forearm, neck, upper trunk and lower extremities. No mucosal lesions were seen.

The complete blood picture, total and direct bilirubin levels, and serum protein levels were normal. Aspartate aminotransferase, alanine aminotransferase and alkaline phosphatase were mildly raised. Histopathology of a lesion showed a hyperkeratotic acanthotic epidermis with irregular elongation of the...
rete ridges and basal cell degeneration. The upper dermis showed a dense lymphohistiocytic band-like inflammatory infiltrate extending into the epidermis. Direct immunofluorescence showed multiple colloid bodies (IgG and C3) with a strong continuous ragged fibrinogen band in the basement membrane zone (Figure 2). HBsAg by ELISA and anti-HCV antibodies were negative. The patient was treated with oral steroids in tapering doses and oral antihistamines for two months. The lesions regressed with post-inflammatory hyperpigmentation.

DISCUSSION

The etiology of LP is still unknown and is probably multifactorial. Immunological mechanisms are almost certainly involved as evidenced by the dermal infiltrate of T lymphocytes. LP is often found in association with a variety of underlying conditions, in particular liver diseases such as primary biliary cirrhosis, primary sclerosing cholangitis, and hepatitis C and B infections.\(^2\)

Vaccination against hepatitis B has been associated with various complications including the occurrence or worsening of immunologically mediated diseases such as vasculitis, myasthenia gravis, multiple sclerosis and lupus erythematosus.

Since the first case reported in 1990,\(^3\) fifteen cases of LP occurring after hepatitis B vaccine have been reported. The pathogenesis of LP subsequent to HBV vaccination remains unknown. A chronic graft versus host like autoimmune reaction has been suggested as a pathogenetic mechanism. Cross reactivity between HBs antigen used in the HBV vaccine and shared epitopes on keratinocytes has been suggested.\(^4\) LP after HBV vaccination occurs irrespective of the type of vaccine used. The latent period for the appearance of the eruption ranges from a few days to three months after any of the three doses.\(^1\)

REFERENCES