

## A rare extrahepatic syndrome related to acute hepatitis type B : Epididymitis in an adolescent

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### Abstract

**Hepatitis B is a common, vaccine-preventable infection with high mortality and morbidity rates worldwide. Numerous extrahepatic syndromes have been described in patients with either acute or chronic viral hepatitis B. But there is no previous report of co-existence of HBV infection and epididymitis in the English literature. We would like to present and discuss a 12-year-old male patient with epididymitis that might be relation exist with an underlying acute hepatitis B infection.** (*Acta gastroenterol. belg.*, 2005, 68, 270-271).

**Key words :** epididymitis, extrahepatic syndromes, acute hepatitis B infection, hepatitis B virus, adolescent.

### Introduction

Hepatitis B is a common, vaccine-preventable infection with high mortality and morbidity rates worldwide. Extrahepatic syndromes including serum-sickness like syndrome, papular acrodermatitis, polyarteritis nodosa (PAN), membranous or proliferative glomerulonephritis, polymyalgia rheumatica, leucocytoclastic vasculitis, Guillain-Barré syndrome, cryoglobulinemia, aplastic anemia, myocarditis, pericarditis, polymyositis, juvenile dermatomyositis, pleural effusion have been described in patients with either acute or chronic viral hepatitis B (1-3). Hepatitis B virus (HBV) related extrahepatic syndromes have been thought to be a result of various immunologic mechanisms (1).

Nakamura *et al.* reported a 57-year-old man with acute hepatitis type B, which was protracted and complicated by polyarteritis nodosa and epididymitis (4). These authors suggested that the simultaneous occurrence of these two conditions could be distinct or epididymitis could be triggered by the HBV infection. But there is no previous report of co-existence of HBV infection and epididymitis in adolescence in the English literature.

We present a case with epididymitis that might be an extrahepatic manifestation of HBV infection. Possible causes of epididymitis were ruled-out by clinical, bacteriological, viral and immunological investigations. This observation suggests possible relation between acute HBV infection and epididymitis.

### Case report

A 12-year-old male patient presented with jaundice and fatigue. The patient's history was negative for previous hepatitis, dental extraction, surgery and circumcision and hepatitis B vaccination ; his family history was negative for hepatitis B exposure. The family with five members have been resided in a squatter's house. Physical examination revealed a body weight of 32 kg's (10-25 p), height 141 cm's (10-25 p), blood pressure 110/70 mmHg, pulse rate 92/min, body temperature 36.8°C. The patient had two Bacille Calmette-Guérin (BCG) vaccine scars. Purified protein derivate (PPD) skin test was 6 mm in diameter. The patient was jaundiced but there was no sign of visceromegaly. Laboratory data was as follows ; liver transaminases were not exceeding the level of 1000 IU/L with a total bilirubin level of 12 mg/dL and a direct fraction of 10 mg/dL. Albumin was within normal ranges (4 g/dL). Prothrombin time was also within normal limits. Hepatitis B surface antigen (HBsAg) and hepatitis B e antigen (HBeAg) were positive, IgM antibody to hepatitis B e antigen (IgM anti-HBeAg) was negative, IgM antibody to hepatitis B core antigen (IgM anti HbcAg) was positive, IgM antibodies to hepatitis A virus (IgM anti HAV), antibodies to hepatitis C virus (Anti-HCV) and hepatitis D virus (Anti-Delta) were negative, as well. Over the next two weeks, the patient presented a second time with complaints of pain and swelling in the genital area. Physical examination revealed scrotal edema with tenderness on palpation, but with no redness. Scrotal color doppler-ultrasonography (CDUS) examination was performed because of the suspicion of bilateral epididymo-orchitis : size and perfusion of testes and scrotal fluid quantity were in the normal range, both epididymes were swollen and their perfusion was increased. Blood culture was negative. The patient's urinalysis and urine culture were negative. Urine culture for *Ureaplasma urealyticum* was negative. Serologic evaluation for IgM antibodies against *Chlamydial* organisms, human cytomegalovirus (CMV) and mumps virus were negative. IgG and IgM antibodies against Epstein Barr virus viral capsid antigen were negative. Neutralizing antibodies against Coxsackieviruses were

negative at onset of the illness and four weeks later. *Brucella* serum agglutination test was negative as well as IgG and IgM antibodies against *Brucella*. Antibody to human immunodeficiency virus (HIV) was negative. Anti-ds DNA and antinuclear antibodies (ANA) were negative. Abdominal ultrasonography performed to rule-out a urinary tract anomaly revealed no pathology and showed nonspecific heterogeneity of the liver parenchyma. Voiding cysto-urethrography was normal. The diagnosis of epididymitis secondary to acute HBV infection was therefore proposed. Antibiotherapy and anti-inflammatory therapy was initiated and the patient was followed in collaboration with the pediatric surgery clinic. Two weeks later alanine aminotransaminase and aspartate aminotransferase activity were still above normal limits (206 U/L and 105 U/L). Total bilirubin was measured 1.3mg/dl, HBsAg and anti-Hbe antibodies were positive. After two months Anti HBe was positive and both HBeAg and HBsAg were negative. The patient's scrotal tenderness and pain persisted for 10 days while scrotal swelling continued as long as 45 days. During the 12 months follow-up period, physical examination revealed no pathological signs.

## Discussion

Numerous extrahepatic syndromes including serum sickness like syndrome, papular acrodermatitis, PAN, membranous or membrano-proliferative glomerulonephritis and pleural effusion have been reported in patients with both acute and chronic hepatitis B (1-3).

In contrast to the extrahepatic syndromes in acute viral hepatitis which are self-limited, the syndromes associated with chronic viral hepatitis may contribute significantly to the morbidity and mortality of the persistent viral infection (5).

Hepatitis B virus, unlike other hepatotropic viruses, is a noncytopathogenic virus that causes injury by immune mediated processes. Immune mediated mechanisms are also involved in the extrahepatic conditions that can be associated with HBV infections (2). Although viruses are commonly cited as triggers for autoimmune disease, the actual mechanisms by which they initiate autoimmunity are unknown. Molecular mimicry is the most popular hypothesis suggesting that viral antigens showing homologies with host antigens generate an immune response that damages host tissue. The viral antigen may not be necessary for perpetuation of the disease, and cross-reacting immune responses can involve humoral,

cellular, or both types of reactivity (6). As mentioned above, we think that development of epididymitis in our patient could be due to immunological mechanism.

Epididymitis is an inflammation or infection of the epididymis that is seen infrequently in prepubertal boys but when it occurs it usually accompanies urinary tract infection, often secondary to structural abnormalities of the urinary tract (7). Urinary tract infection, chemical irritation, autoimmune disease, granulomatous disease, vasculitis, and secondary spread from meningitis can produce epididymitis (8). Unusual infections causing epididymitis include mumps, *Haemophilus influenzae*, Brucellosis, cytomegalovirus virus, group B Coxsackievirus, and tuberculosis (9). In this case, serologic evaluation for HIV, cytomegalovirus, mumps, Epstein Barr virus, *Brucella* and tuberculosis infection was ruled out. Anti-ds DNA, ANA gave negative results. Thus infections with those agents and rheumatic diseases were ruled out.

Epididymitis is less common in adolescents. We present a case of epididymitis that might be an extrahepatic manifestation of HBV infection. Possible causes of epididymitis were ruled-out by clinical, bacteriological, viral and immunological investigations. This observation suggests possible relation between acute HBV infection and epididymitis. Further observations could clarify this possible relationship.

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