

Case report

LOCALIZATION OF HEPATITIS B SURFACE ANTIGEN IN THE PANCREAS AND LYMPH NODES

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Abstract: An autopsy case of syphilitic aortic aneurysm with an infection of hepatitis B virus in a 65-year-old woman is reported. Specifically, hepatitis B surface antigen (HBsAg) was revealed in the pancreatic acinar cells and histiocytes of retroperitoneal pancreatic lymph nodes as well as in part or nearly all of the cytoplasm of scattered hepatocytes by orcein and immunoperoxidase methods. These findings suggest that hepatitis B virus may replicate in the pancreas. It was not clear whether HBsAg in the lymph nodes is related to infectiveness or not. The present study further confirms the previous reports of extrahepatic localization of HBsAg.

INTRODUCTION

The liver is thought to be the primary site of hepatitis B viral replication and synthesis. Although hepatitis B virus antigens have been extensively revealed in the hepatocytes, hepatitis B surface antigen (HBsAg) and/or its related immune complexes have been showed as extrahepatic localizations in the renal glomeruli (Brzosko *et al.*, 1974; Nowoslawski *et al.*, 1972), vascular wall (Michalak, 1978), and pancreas (Shimoda *et al.*, 1981; Yoshimura, *et al.*, 1981). Localization of HBsAg in hepatocellular carcinoma has been reported (Shikata, 1973; Nayak and Sachdeva, 1975; Nazarewicz *et al.*, 1977; Wu, 1979; Senba, 1981, 1982; Kawano, 1983). Thus, present evidence indicates that humoral immune mechanisms in relation to HBsAg are involved even in extrahepatic lesions. Histological location of HBsAg in the lymph nodes has not well been recognized.

We have observed morphologic localization of HBsAg in extrahepatic tissues by immunohistochemical method. The present postmortem case may give some evidence to suggest that hepatitis B virus replicate in extrahepatic tissues.

CASE REPORT

A 65-year-old woman was admitted to Nagasaki University Hospital for treatment of aortic aneurysm. The patient died of rupture of aortic aneurysm before operation and

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laboratory examinations of hepatitis B virus and liver functions. At autopsy, aortic aneurysm, 13 cm in diameter and located at the site 2 cm from the aortic valve, with endarteritis and periarteritis of the adventitial vessels, and vasa vasorum surrounded by lymphocytes and plasma cells of the aorta, suggesting syphilitic aortitis, was observed. The liver showed histologically chronic hepatitis with periportal fibrosis and lymphocytic cell infiltration.

Tissue specimens of all organs including liver, pancreas, and lymph nodes were taken at autopsy and fixed in 10% formalin. After ordinary methods of histological preparations, paraffin blocks of specimens were cut at 4 μ , and stained with histochemical methods using orcein (Merck, Art. 7091, Lot 8529084) (Senba, 1982) and immunoperoxidase methods (DAKO PAP KIT: K523, Lot. 063-3) for HBsAg.

HBsAg was revealed in numerous hepatocytes by orcein and immunoperoxidase methods. Furthermore, HBsAg was observed in the acinar cells of pancreas (Fig. 1), and histiocytes of retroperitoneal pancreatic lymph nodes (Fig. 2) by both orcein and immunoperoxidase methods. No particular lesions of the pancreas and lymph nodes were observed, microscopically. Any organ specimen examined other than liver, pancreas and retroperitoneal pancreatic lymph nodes did not show HBsAg.

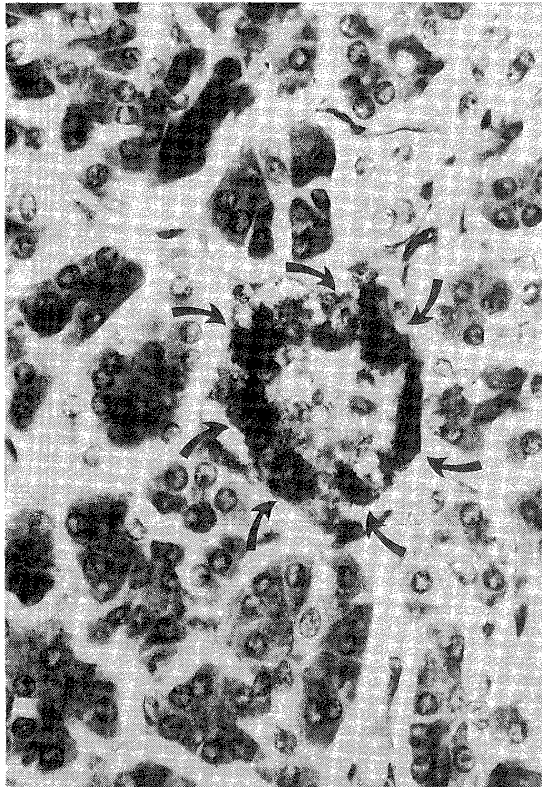


Figure 1 HBsAg is localized in the cytoplasm of some acinar cells of the pancreas (arrows). (Immunoperoxidase method, counterstained with hematoxylin, original magnification, $\times 400$)

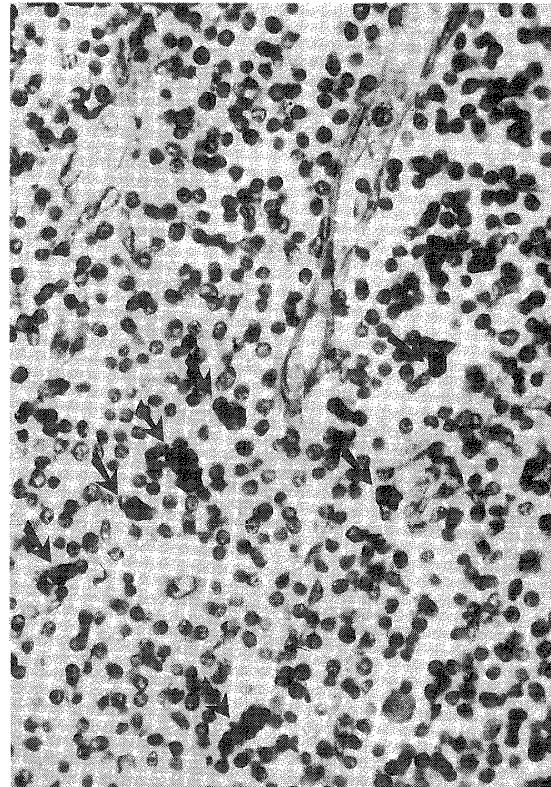


Figure 2 Cytoplasmic positive staining for HBsAg in the histiocytes of lymph nodes (arrows). (Immunoperoxidase method, counterstained with hematoxylin, original magnification, $\times 400$)

DISCUSSION

HBsAg has been revealed in both intrahepatic and extrahepatic tissues. Hepatitis B virus infection could be associated with the production of tissue damage outside the liver. In various extrahepatic diseases, immune complex deposition appears to be responsible for disease manifestations. It has been reported that various immunological processes may be involved and that host immune responses to the viral antigens may determine tissue damage according to morphological appearances and immunopathological abnormalities.

The present study showed that there is a possibility of infectiveness and replication of hepatitis B virus or at least an affinity of HBsAg to cells not only of the hepatocytes but also the pancreatic parenchymal cells and histiocytes of lymph nodes. However, we were not able to get any observation of pathogenesis of the pancreas and lymph nodes in this case. Whether or not HBsAg in the histiocytes of lymph nodes is related to infectiveness was not clear.

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脾臓およびリンパ節内に存在する B 型肝炎ウイルス表層抗原

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梅毒性大動脈炎に起因したと考えられる、大動脈瘤破裂により死亡した65歳女性の剖検例において慢性肝炎が見出され、オルセイン組織化学染色および酵素抗体法により、肝実質細胞の胞体のほかに、脾臓の腺房細胞胞体やリンパ節の組織球内にも、B型肝炎ウイルス表層抗原(HBsAg)が観察された。HBsAgの存在する脾臓およびリンパ節の組織内において、病原体や異物などに起因する反応性所見は、見出せなかった。このことはB型肝炎ウイルスによる感染は、肝臓と肝臓以外の組織において、生体防御が異なるものと思われるが、肝臓以外におけるHBsAgの病態学的意義は、今後検討しなければならない。B型肝炎ウイルスは、肝実質細胞のほかに脾臓実質細胞にも存在しうることが、今までにも示唆されているが、本症例はこのことをいっそう裏付けるものである。なおHBsAgがリンパ節内に明らかに存在したという剖検例の報告は、我々が調べた範囲ではこれまでのところ見当たらない。

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