Case Report

Hepatocellular Carcinoma in Children Presents with Massive Upper Gastrointestinal Bleeding: A Case Report

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Hepatocellular carcinoma (HCC) is a very rare pediatric tumor. The incidence is 0.5-1.0 cases per million children. The most common clinical sign is abdominal mass. HCC often develops in the presence of underlying liver disease and cirrhosis, especially viral hepatitis. The authors hereby report a 9-year-old girl with hepatocellular carcinoma associated with positive hepatitis B surface antigen at Queen Sirikit National Institute of Child Health. She was admitted because of massive upper gastrointestinal bleeding (UGIB) due to esophageal varices. Multiple sessions of esophagogastroscopy with sclerotherapy, banding ligation and glue injection of esophageal varices were performed but she still had massive UGIB. Sengstaken-Blakemore tube was used, after which she developed a ruptured esophagus. Finally she passed away. Liver necropsy was performed and diagnosed as HCC.

***Keywords**: Hepatocellular carcinoma, Esophageal varice, Gastrointestinal bleeding*

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Primary neoplasms of the liver are rare in children. Primary liver cancer is subdivided into the following histological subtypes: hepatoblastoma and hepatocellular carcinoma (HCC). Incidence of HCC is 0.5-1.0 cases per million children and very rare in children below 10 years of age. HCC often develops in the presence of underlying liver disease and cirrhosis, especially viral hepatitis. Main symptoms are palpable hepatic mass, abdominal pain and cachexia.

The authors reported a case of HCC presented with uncontrolled esophageal varices bleeding without liver mass.

Case Report

A 9-year-old girl from the Eastern part of Thailand who presented with massive upper gastrointestinal bleeding (UGIB) and hematochezia for 1 day. Physical examination showed moderate pallor. The abdominal examination revealed dilated superficial veins, her liver was just palpable and she had splenomegaly. After initial resuscitation and packed red cell (PRC) transfusion, she still had massive UGIB. Ultrasound of the abdomen showed hepatosplenomegaly with inhomogeneous increased ecchogenicity of the liver. She was referred to Queen Sirikit National Institute of Child Health (QSNICH) with suspected portal hypertension and esophageal varices. Her vaccinations were incomplete. She had neither underlying diseases nor previous jaundice. Physical examination at QSNICH revealed cachexia, dilated superficial veins and mildly distended abdomen. The liver was just palpable and the spleen was 4 cm below the left costal margin. Complete blood count showed Hb 10.8 g/dl, Hct 33.2 %, WBC 10,900 /ul, Plt 277,000 / ul. The results of the liver function test were TP 5.34, Alb 2.74, Glob 2.60 g/dl, Chol 124, TB 3.34, DB 1.57, IB 1.77 mg/dl, AST 185, ALT 51, ALP 212 U/L. The results of the coagulogram were PT 25.2 (11.2-14.6), INR 2.1, PTT 27.7 (27-34), TT 5.4 (4.7-6.5). The hepatitis B profile was HBsAg-positive, Anti HBs-negative, Anti HBc-positive, Anti HBcIgM-negative. The Anti HCV was negative. The initial diagnosis was cirrhosis with portal hypertension with esophageal varices from chronic hepatitis B infection. The management was intravenous octreotide, omeprazole, cefotaxime, PRC transfusion, and Sengstaken-Blakemore tube (SBT) insertion. Multiple sessions of esophagogastroscopy with sclerotherapy, banding ligation and glue injection of esophageal varices were performed (Fig. 1, 2). After that she still had massive UGIB and developed ruptured esophagus. The first operation included thoracotomy to repair the esophagus and gastrostomy was performed. Due to massive variceal bleeding, the second operation was done in an attempt to do a mesocaval

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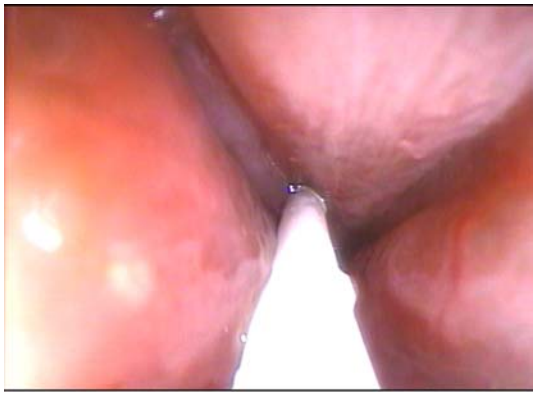

Fig. 1 Shows esophagogastroscopy with sclerotherapy

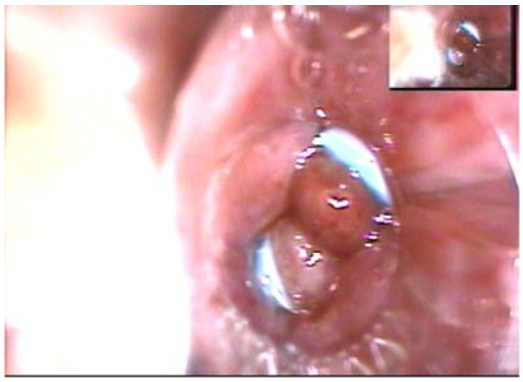

Fig. 2 Shows esophagogastroscopy with banding ligation

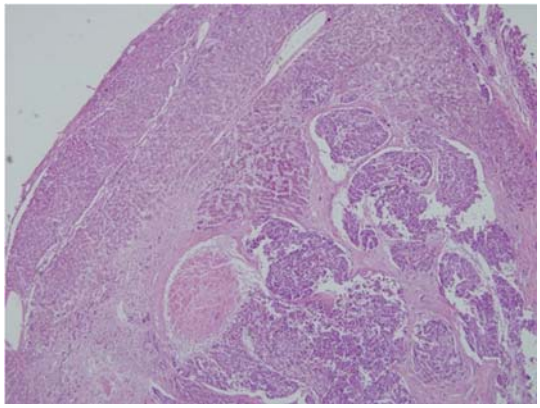

Fig. 3 Shows lobulated tumor

shunt. But unexpectedly the operative findings showed straw-colored peritoneal fluid 1,800 ml., macronodular liver cirrhosis and generalized small and large bowel gangrene. Therefore, mesocaval shunt could not be performed. Finally, she passed away. Liver necropsy was performed and diagnosed as HCC. Histopathology of liver showed foci of bland-looking neoplastic

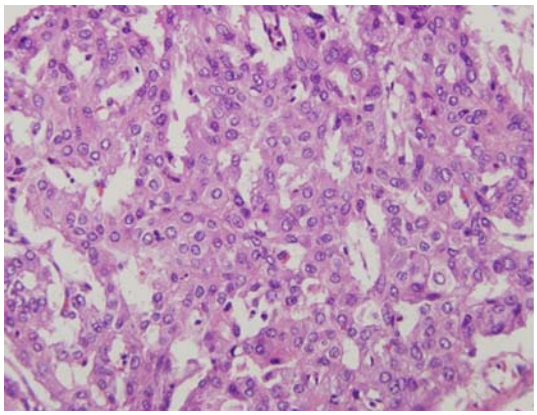

Fig. 4 Shows tumor sheet (normal < 3 cord) foci of bland-looking neoplastic hepatocytes arranged in thick trabeculae possess enlarged nuclei, prominent nucleoli and eosinophilic granular cytoplasm

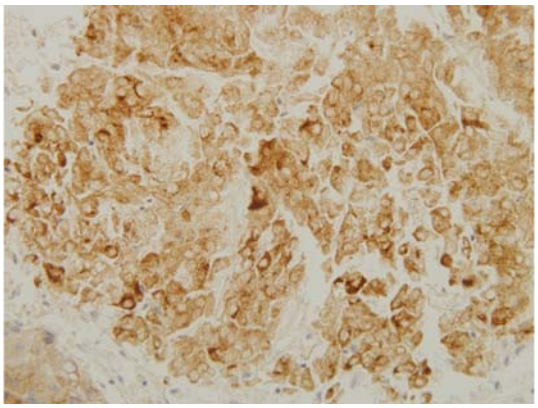

Fig. 5 Glybican C stain HCC

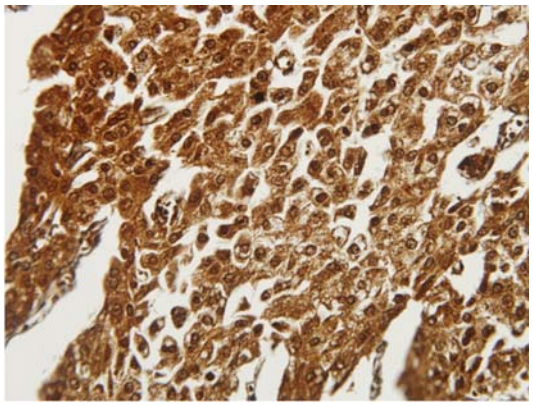

Fig. 6 Reticulin stain shows thick trabeculae of HCC

hepatocytes, arranged in thick trabeculae. They possess enlarged nuclei, prominent nucleoli and eosinophilic granular cytoplasm (Fig. 3-6). The remaining tissue

reveals cirrhosis, cholestasis, and necrosis. The hepatocytes expressed HBsAg and HBcAg immunostains.

Discussion

Primary neoplasms of the liver are rare in children. In Thailand, the incidence of liver tumor in children under 15 years is 2.4/1,000,000 children. Primary liver cancer is subdivided into the following histological subtypes: hepatoblastoma and hepatocellular carcinoma (HCC). HCC comprises 0.7% of overall childhood cancer and 25.9% of hepatic tumor[1]. It is widely accepted that viral cirrhosis caused by hepatitis B virus (HBV) infection is an important risk factor for the development of HCC. However, HCC can develop in non-cirrhotic livers, particularly in countries where HBV is endemic[2]. In Asia, Africa, and in some eastern European countries, chronic hepatitis B is the prime cause of HCC[3]. In Thailand, the prevalence of HBV infection is 65% in patients with HCC[4]. Chronic carriers of the hepatitis B surface antigen were found to be the risk factor (odds ratio for HCC 15.2) in a case control study in Northeast Thailand[5]. HCC may develop 6-11 years after HBV infection and the incidence of HCC is exceedingly rare in children below 10 years of age[6].

The presented patient is a 9-year-old girl with unknown family history of hepatitis B infection. History-taking revealed incomplete vaccination. Universal hepatitis B immunization will prevent the carrier state in children and will lead to a dramatic reduction in HCC. In Thailand, the incidence of HCC is significantly lower in children who received the hepatitis B vaccine at birth as in the other countries[7]. In Taiwan, almost all HCC patients have HBV infection of which 94% were caused by maternal transmission[8]. The most common presenting symptom and sign of childhood HCC are abdominal mass and abdominal pain, followed by anorexia, fever and internal bleeding. Hepatosplenomegaly, superficial venous engorgement, and ascites are the main physical signs[9]. In order to establish a diagnosis of HCC, combined findings of classic appearance on one of the imaging modalities and elevated serum alpha-fetoprotein must be present[10]. Most of the pediatric cases of HCC in Thailand are over 10 years of age and present with liver mass. The presented case was only 9 years old and presented with uncontrolled esophageal varices bleeding without liver mass. HBV-related HCC is often accompanied by portal vein tumor thrombus (PVTT), and PVTT may cause severe portal hypertension leading to uncontrolled esophageal varices as in our case[2]. In the presented case HCC was diagnosed from liver necropsy. Chronic hepatitis B infection may be the prime cause of HCC.

Conclusion

HCC is the second most common liver tumor in children. Most common presentations are abdominal mass and abdominal pain. The authors' case report presented with uncontrolled esophageal varices bleeding without liver mass. The result of positive hepatitis B marker and liver necropsy proved to be hepatocellular carcinoma resulting from chronic hepatitis B infection.

Potential conflicts of interest

None.

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รายงานผู้ป่วยเด็กโรคมะเร็งตับชนิด hepatocellular carcinoma ที่มาด้วยอาการอาเจียนเป็นเลือด

ศิริลักษณ์ เจนนุวัตร, นิยะดา วิทยาศัย

โรคมะเร็งตับชนิด hepatocellular carcinoma เป็นโรคมะเร็งที่พบได้ไม่บ่อยในเด็กโดยพบ 0.5-1.0 ราย ต่อเด็กล้านคน อาการที่พบบ่อยคือ ก้อนในท้อง โรคมะเร็งในตับชนิด hepatocellular carcinoma มักพบในผู้ป่วยที่มีปัญหาโรคตับ หรือมีภาวะตับแข็งโดยเฉพาะที่เกิดมาจากไวรัสตับอักเสบ ผู้นิพนธ์รายงานผู้ป่วยเด็กหญิงไทยที่เป็นโรคมะเร็งตับชนิด hepatocellular carcinoma ซึ่งมีความสัมพันธ์กับไวรัสตับอักเสบ ชนิดบีที่มารับการรักษาที่สถาบันสุขภาพเด็กแห่งชาติมหาราชินี โดยมีอาการนำคืออาเจียนเป็นเลือดสดเนื่องจาก การแตกของเส้นเลือดขอดที่หลอดอาหาร ได้ทำการรักษาโดยการฉีดยา และรัดเส้นเลือดขอดที่หลอดอาหาร แต่ผู้ป่วยยังคงมีอาเจียนเป็นเลือดสดปริมาณมาก จึงทำการใส่สาย Sengstaken-Blakemore tube ต่อมาผู้ป่วยมีภาวะแทรกซ้อนคือหลอดอาหารฉีกขาด ผู้ป่วยได้รับการรักษาโดยการผ่าตัดหลอดอาหาร ต่อมาผู้ป่วยเสียชีวิตได้ทำการตรวจชิ้นเนื้อตับภายหลังจากผู้ป่วยเสียชีวิตพบว่าเป็นมะเร็งตับชนิด hepatocellular carcinoma