Hepatic arteriovenous malformation

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Abstract

Hepatic arteriovenous malformation mostly occurs as a manifestation of hereditary hemorrhagic telangiectasia. Clinical symptoms include hyperpulsatile heart failure, hepatic encephalopathy, and ascites. We present a case of hepatic arteriovenous malformation and atrial septal defect causing heart failure.

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Abstract

Hepatic arteriovenous malformation mostly occurs as a manifestation of hereditary hemorrhagic telangiectasia. Clinical symptoms include hyperpulsatile heart failure, hepatic encephalopathy, and ascites. We present a case of hepatic arteriovenous malformation and atrial septal defect causing heart failure.

Keywords

arteriovenous malformation; atrial septal defect; heart failure

1 CASE

A 77-year-old woman visited our hospital because of bilateral leg edema and mild dyspnea. Blood test results showed normal liver function and albumin levels, but high levels of ammonia. An echocardiogram revealed atrial septal defect (ASD) and a right-left shunt associated with ASD caused pulmonary artery dilation (Figure 1a and 1b). Cardiac catheterization revealed pulmonary artery pressure was within the normal range. Abdominal ultrasonography revealed that the intrahepatic portal vein was prominent and increased blood flow, but no findings were suggestive of liver cirrhosis (Figure 2). A contrast-enhanced CT showed multiple hepatic arteriovenous malformations (AVM) (Figure 3). It was thought that AVM and ASD caused capacitive loading of right heart system and heart failure symptoms had occurred. The cause of high ammonia level was thought to be hepatic AVM. Her leg edema and dyspnea improved, and ammonia levels decreased with oral medications.

Hepatic AVM is a rare disease, mostly occurring as a manifestation of hereditary hemorrhagic telangiectasia. Clinical symptoms include hyperpulsatile heart failure, hepatic encephalopathy, and ascites[1,2]. Hepatic arterial embolization has been reported to be effective and to improve heart failure symptoms[3]. Hepatic angioembolization or heart surgery may be necessary in this case if heart failure symptoms worsen.

AUTHOR CONTRIBUTION

Kento Shionoya wrote and revised the manuscript, and involved in the literature search. Makoto Kako supervised the case study. All authors read and approved the final manuscript.

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None

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

CONSENT

Written informed consent was obtained to publish this report in accordance with the journal's consent policy.

ETHICAL STATEMENT

Not applicable.

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Figure legends

Figure 1a and b: An echocardiogram revealed atrial septal defect and pulmonary artery dilation.

Figure 2: Abdominal ultrasonography revealed that the intrahepatic portal vein was prominent and increased blood flow.

Figure 3: A contrast-enhanced CT showed multiple hepatic arteriovenous malformations.