

Discrete subaortic stenosis diagnosed intraoperatively

Yusuke Sugasawa · Masakazu Hayashida ·
Eiichi Inada

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To the Editor:

Discrete subaortic stenosis (DSS) is an uncommon form of left ventricular outflow tract (LVOT) obstruction characterized by a discrete subaortic membrane (DSM) [1]. We report a case of DSS that was misdiagnosed as valvular aortic stenosis (AS) preoperatively with transthoracic echocardiography (TTE) or cardiac catheterization and correctly diagnosed intraoperatively by careful examination with transesophageal echocardiography (TEE).

A 5-year-old boy, who had undergone corrective surgery for coarctation complex in the neonatal period, was scheduled to undergo aortic valve replacement or aortic valve plasty for severe AS. The preoperative diagnosis made by TTE and cardiac catheterization was valvular AS with the peak pressure gradient of 92 mmHg resulting from limited opening of the right coronary cusp (RCC) and moderate aortic regurgitation (AR). Our initial findings with intraoperative TEE after induction of anesthesia were the same (Online Resources 1A–D, 2A). By closer observation, however, we noticed that the tip of the RCC opened almost fully (Online Resource 1B). Because it was difficult to identify the morphological structure causing AS because

of the rapid movement of the valve structures, we froze the moving image and reviewed it carefully by frame-by-frame advance. By means of this procedure, we could identify a DSM just below the RCC that obstructed the LVOT (Online Resources 3A,B) and thus could establish the diagnosis of DSS. Resection of the DSM was performed on mild hypothermic cardiopulmonary bypass (CPB). After ending CPB, we confirmed that the DSM was successfully resected (Online Resource 4A), the LVOT obstruction was released (Online Resource 4B), and the grade of AR was reduced from moderate to mild (Online Resource 2B). Continuous-wave Doppler recordings showed that the peak flow rate in the aorta decreased from 4.0 m/s before CPB to 2.6 m/s after CPB (Online Resources 5A,B).

Our experience indicates that although TEE is superior to TTE in evaluating morphological features of DSS [1], careful examination is required to identify this structure even when using TEE in some patients with DSS.

Reference

1. Huang JJ, Azakie A, Russell IA. Echo rounds: discrete subvalvular aortic stenosis. *Anesth Analg*. 2010;110:1003–5.

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Y. Sugasawa (✉) · M. Hayashida · E. Inada
Department of Anesthesiology and Pain Medicine, Juntendo
University School of Medicine, 3-1-3 Hongo, Bunkyo-ku,
Tokyo 113-8431, Japan
e-mail: ysugasa@juntendo.ac.jp