



## Editorial

## Editorial: Cor triatriatum: An intraoperative diagnosis

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Cor triatriatum is a rare congenital anomaly in which a fibromuscular membrane divides the left atrium into two distinct chambers. The incidence has been reported as 0.1–0.4% of congenital heart disease [1,2]. Cor triatriatum is frequently associated with other cardiac abnormalities [3]. In adults, the most common abnormalities associated with cor triatriatum are mitral regurgitation, atrial septal defect, and the presence of left superior vena cava with unroofed coronary sinus. Less common associated abnormalities include an anomalous partial pulmonary venous connection. Cor triatriatum most commonly manifests itself in infancy or childhood, but in some cases it does not appear until later. The most common symptoms present in adults are dyspnea, hemoptysis, and orthopnea. The proposed reasons for the late conversion of asymptomatic cor triatriatum to a symptomatic state are thought to be one or more of the following precipitating factors: fibrosis and calcification of the orifice in the anomalous septum; the development of mitral regurgitation; and the development of atrial fibrillation. Cor triatriatum can be asymptomatic and may be detected as an incidental finding in a patient who has echocardiography for other reasons. In general, this represents the unobstructed form that requires no early interventions. It is possible that diagnostic accuracy has increased recently, in step with the development of such investigative procedures as transthoracic echocardiography (TTE), transesophageal echocardiography (TEE), computed tomography, and magnetic resonance imaging. This would account for a recent increase in the reported frequency of cor triatriatum.

In this issue of the journal, Umemura et al. [4] report a case of cor triatriatum which was detected incidentally during mitral valve repair operation. Preoperative cardiac catheterization showed no evidence of pulmonary hypertension despite the presence of significant mitral regurgitation and poor left ventricular function. Thus, it appears that the orifice of the abnormal septum in the left atrium was thought to be large enough for adequate pulmonary venous return. TEE had not been performed before operation. In Japan, TEE is generally performed for patients with mitral regurgitation before valve repair operation. As the authors mentioned, preoperative TEE

is recommended for the purpose of technical consideration for successful valve repair.

The remarkable point of this case is that the diagnosis of cor triatriatum was made by intraoperative TEE, although this condition might be found after left atriotomy even if intraoperative TEE were not performed. The use of TEE during cardiac surgery has increased dramatically in the past 20 years. TEE is now widely accepted as a routine monitoring and diagnostic tool [5,6]. Among the various techniques for intraoperative hemodynamic management, TEE is considered promising. The unique ability of TEE in direct, real-time visualization of cardiac structures provides an invaluable role in the intraoperative management of cardiac surgery as well as non-cardiac surgery. Cardiac surgeons have become accustomed to relying on intraoperative TEE findings to assist in the planning, execution, and evaluation of surgery. TEE has a substantial impact on surgical decision-making. In a retrospective analysis of 12,566 procedures, TEE before cardiopulmonary bypass led to a change in planned surgery in 7% of cases [7]. The majority of changes in planned surgical procedures are predictable changes. In these cases, final decision-making about actual surgical procedure is deferred until the time of operation. Actual procedures such as the type of surgery and choice of artificial valve are decided by the intraoperative TEE findings immediately prior to the procedure. On the other hand, intraoperative TEE may allow the detection of a new lesion not previously suspected from clinical examination or preoperative investigation as in the present case. Thus, widespread use and increasing experience of intraoperative TEE are desirable. The rate of unpredictable changes of the surgical procedure following the intraoperative TEE may be related to the quality of preoperative investigation. Any changes in surgical procedure may have significant implications for the patient, including issues of consent, and influence on overall morbidity and mortality from the magnitude of the procedure. Both the appropriate preoperative evaluation of the patient and the flexible intraoperative surgical decision-making are important. A multidisciplinary team approach including referring cardiologist, ultrasonographer, operating surgeon, and anesthesiologist is needed for successful cardiac surgery.

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