Two Dehiscences of the Aortic Valve Commissure and Cusp with Progressive Acute Aortic Regurgitation

Hirohito Ishii, MD, Kunihide Nakamura, MD, Hiroyuki Nagahama, MD, Masakazu Matsuyama, MD, George Endo, MD, and Masanori Nishimura, MD

Department of Surgery II, Faculty of Medicine, University of Miyazaki, Miyazaki, Miyazaki, Japan

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Case Report

A 54-year-old female with acute heart failure due to aortic regurgitation (AR) was admitted to our hospital. Following admission, her condition worsened progressively; thus, surgery was performed prematurely. During surgery, two dehiscences were visualized in the aortic valve commissure between the right and left cusps and the upper part of the left coronary artery ostium. However we scheduled aortic valve replacement (AVR) at first, we made the shift to perform the aortic root replacement for reinforcement of the aortic wall around the left coronary artery ostium. We describe a rare case of two dehiscences at the aortic root, which is the first report.

Keywords: dehiscence, avulsion, acute aortic regurgitation

Introduction

We previously reported a case of aortic valve commissural dehiscence resulting in acute aortic valve regurgitation (AR), with a history of aortic valve replacement (AVR). A commissural dehiscence is a rare clinical condition that the detachment of aortic valve commissure from the aortic wall with acute AR and this common treatment is AVR. Simple commissural dehiscence has been reported in some articles. Here we describe a more recent and rare case of a patient with two dehiscences of the aortic valve commissure and the upper part of the left coronary artery ostium complicated by acute AR, which is the first report. The difference as last manuscript is that she necessitated aortic root replacement for reinforcement of the aortic wall around the left coronary artery ostium.
part of the left coronary artery ostium, the surgical intervention was performed for aortic root replacement using a composite graft sutured a 21-mm mechanical valve and a 24-mm synthetic graft. The dehiscence of the aortic valve commissure was repaired using a horizontal mattress suture sandwiching between the composite graft and a Teflon® pledget. The left and right coronary buttons were implanted end-to-side into the composite graft, and the dehiscence of the upper part of the left coronary artery ostium was reinforced by sandwiching between the composite graft and the back of the Teflon® felt (Fig. 3). The operation time was 455 min, aortic cross-clamp time was 204 min, extracorporeal circulation time was 259 min, and amount of bleeding was 270 ml. The surgery was successful with an uneventful postoperative recovery.

Discussion
Clinically, most causes of acute AR have been reported to follow IE or type A aortic dissection. As already reported at the last manuscript, the detachment of the aortic valve commissure from the aortic wall can cause acute AR, which is usually an isolated event and a very rare condition.

Although rarely reported, this condition has been described in some reports as dehiscence, avulsion, or commissural tear. This clinical condition is associated with progressive acute heart failure, hence immediate surgery is required. Nevertheless, this condition was difficult to diagnose prior to surgery. The causes of aortic valve commissural dehiscence include thoracic trauma, cystic medial necrosis, degenerative diseases, and atheromatous plaque, but with no pathological changes. In this case pathologically the valves and the aorta were not specific, picking of a part of dehiscence was impossible because of a requiring for repair. Hypertension is considered to be a risk factor for this condition. In such cases, extreme diastolic blood pressure is expected to become overloaded by an aortic valve commissure. In past articles the commissural dehiscence is simple and this dehiscence of the upper part of the left coronary artery ostium is reported first. We expect that it may be caused by the commissural traction force into the left ventricle. Compared two dehiscences, the dehiscence of the upper part of the left coronary artery ostium was more fresh in looks. A common treatment for this condition is AVR, but there are only few reports on root replacement in cases associated with root enlargement. We preferred to use aortic root replacement instead of AVR because of reinforcement of the aortic wall around the left coronary artery ostium.

Conclusion
An incidence of two dehiscences of the aortic valve commissure and cusp is rare and requires the consideration of aortic root replacement.

Disclosure Statement
The authors have no conflicts of interest to declare.
References


