The operation was divided into (1) removal of the free myxoma in the left atria, (2) resection of the site of the remnant myxoma pedicle located near the fossa ovalis, and (3) mitral valve replacement with a mechanical prosthesis (no. 27 St Jude; St Jude Medical, Inc, St Paul, Minn). Commissurotomy was not performed because of the presence of heavily calcified commissures. Weaning from cardiopulmonary bypass was easily performed, and the patient was extubated on the same day and discharged on day 8. Apart from pleural effusion and short-lasting atrial fibrillation, no early complications occurred. The patient was seen a month after the operation and has recovered well. The gastrointestinal bleeding for which the patient consulted is thought to have been explained by an ischemic colitis caused by microemboli from the resection of a polyp before the operation or from the myxoma. As for the thrombocytopenia, immune thrombocytopenic purpura might be the explanation.

DISCUSSION

The combination of left atrial myxoma and mitral stenosis is extremely rare. With mitral stenosis often predisposing to thrombus formation, the myxoma could have easily been mistaken as such; hence the transesophageal echocardiogram proved to be very useful in making this distinction.[4] Although the complications are similar, the management of a myxoma is essentially surgical. In addition, the initial presentation of this patient, hematochezia with abdominal pain, is not usually how a myxoma presents. The association of a right atrial myxoma with extensive colonic polyposis[5] has been reported once in the medical literature, making one question a possible link between the 2 conditions (with a left atrial myxoma in this case). In conclusion, in this patient's case the rare association of left atrial myxoma and mitral stenosis was proved to be life saving by preventing a potentially tragic embolic complication, such as a cerebrovascular accident.

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Cardiac herniation during robot-assisted cardiac operation

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Video clip is available online.

Cardiac herniation during a cardiac operation is extremely rare. We report a rare case of intraoperative cardiac herniation. Our patient had herniation develop in response to strong positive ventilation to the left lung.

CLINICAL SUMMARY

A 20-year-old male patient was referred to our institution to undergo robot-assisted atrial septal defect (ASD) closure. The patient had typical primum type ASD, and a part of the rim was thin, so closure with a catheter was not recommended. We decided to perform robot-assisted minimally invasive procedure for ASD patch closure. With the patient under general anesthesia, the operation was started with left-sided single-lung ventilation, a right radial arterial line, and a left jugular central venous line. Next, a 16F catheter was inserted through the right jugular vein for venous return during cardiopulmonary bypass, and a 24F catheter was inserted through the right common femoral vein to the inferior vena cava. An 18F catheter was inserted in the right common femoral artery to facilitate arterial flow,

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and cardiopulmonary bypass was established. Ventilation was discontinued, and 2-cm skin incision was made at the 4th intercostal space for assisted window. Then 3 other small skin incisions were made to facilitate insertion of the endoscope and robotic arm. The pericardium was incised to expose the ascending aorta and right side of the heart. The ascending aorta was clamped, and antegrade cardioplegia was delivered from the ascending aorta. The right atrium was incised, and typical primum type ASD was observed. ASD closure with a biologic patch was performed. Cardiopulmonary bypass was tapered and stopped, and the heart started beating by itself. Left-sided single-lung ventilation was restarted. The tidal volume suddenly decreased, and strong positive-pressure ventilation was performed for a few seconds. At that time, sudden short ventricular tachycardia was noted. Moreover, the patient's blood pressure decreased from 120 mm Hg to 85 mm Hg, and his central venous pressure increased from 5 mm Hg to 12 mm Hg.

Transesophageal echocardiography revealed twisted atrial septum. Cardiac herniation was observed directly by endoscope (Video 1). The patient was maintained on durable ventilation, but his hemodynamic condition was unchanged. The left bronchus was blocked, and right-sided single ventilation was started after rotation of the patient's body to the left. The patient's hemodynamic condition improved, and the twisted atrial septum returned to the right position. The patient's hemodynamic condition was stable, and he was discharged 2 days after the operation.

DISCUSSION

Here we report a rare case of intraoperative cardiac herniation. Our patient had herniation develop as a result of strong positive ventilation to the left lung. Cardiac herniation during a cardiac operation is extremely rare; however, surgeons should be careful while adopting a right thoracic approach for cardiac operation.[1] When performing robot-assisted operations, surgeons work through a small window; this hinders the detection of unpredictable intraoperative adverse events. Intraoperative transesophageal echocardiography provided a lot of information in our case, and to our knowledge, ours are the first echocardiographic images showing intraoperative cardiac herniation during a robot-assisted cardiac operation.

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Pentacuspid aortic valve causing severe aortic regurgitation

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Aortic valve dysfunction in relatively young adults may indicate congenital valve malformation. There have been occasional reports of anomalous monocuspid, bicuspid, and quadricuspid valves.

The incidence of bicuspid valves is 2% in the general population, and the incidence of quadricuspid valves is far less common, at approximately 0.003% to 0.013%.[1] Even with technologic progress in image diagnosis, pentacuspid valves have been rarely described.

We report a case of a pentacuspid aortic valve consisting of normal left and right coronary cusps with 3 small cusps divided by well-developed commissures.

CLINICAL SUMMARY

A 46-year-old man presented with chest pain on exertion and frequent premature ventricular contractions on electrocardiography. Transthoracic echocardiography demonstrated severe aortic regurgitation with malformed leaflets and a moderately dilated left ventricle. Transesophageal echocardiography revealed aortic regurgitation due to 5 leaflets. Cardiac catheterization showed normal coronary arteries. The ejection fraction of the left ventricle was 57%. Virtual intraaortic endoscopy by multidetector-row computed tomography confirmed the aortic valve to consist of 2 relatively large leaflets and 3 small leaflets (Figure 1). Premature ventricular contractions were of the monofocal type, originating from the left ventricular septum, around which the aortic regurgitant jet was exposed.

After median sternotomy, the pericardial reflection on the right side was found to shift anteriorly at the sulcus terminalis. Cardiopulmonary bypass was established by cannulation of the ascending aorta and right atrium. After oblique aortotomy, the aortic valve showed 5 clearly divided cusps. The left and right coronary cusps were relatively large, with each accompanied by its own coronary ostium at normal

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