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Spontaneous left atrial dissection presenting as atrial fibrillation

Authors:
E A Khalifa¹, B Albizreh¹, S Helmy¹, A N Ghareep¹, M Alkuwari¹, A Kindawi¹, ¹Hamad Medical Corporation Heart Hospital, cardiology - Doha - Qatar,

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Introduction: Spontaneous left atrial wall dissection (LA-d) is a rare condition with fatal outcome if not managed appropriately. We describe a case of spontaneous LA-d with atrial fibrillation as first presentation.

Clinical report: A 46 year old male with no medical history of relevance, presented with epigastric pain and palpitation of one day duration. He was in respiratory distress, oxygen saturation was 88% on room air and bilateral lung crackles. ECG showed rapid atrial fibrillation. Transthoracic echocardiography showed large oval cystic mass with septations and echo lucent center, filling most of left atrial cavity. It appeared to partially obstruct the left ventricle inflow. Transesophageal echocardiogram revealed that the endocardial layer of the left atrium was separated from the left atrial wall. A large echolucent area was occupying this space suggestive of a hematoma. The mass was obstructing the mitral valve inflow. The pulmonary artery pressure was elevated (figure A). No communication was noted between dissection chamber and the left atrium. The mass was not attached to the mitral valve. No pedicle was visualized. Cardiac CT revealed a large homogenous mass within the posterior wall of the left atrium and occupying all the left atrial cavity, which extended along the pulmonary veins resulting in tight narrowing their lumen (figure B).

Patient was referred for urgent surgery. Cardiopulmonary bypass was established. A left atriotomy was made through a superior septal incision. The posterior left atrial wall was dissected creating a false lumen with fresh blood and clots inside it. Dissection extended to the inter atrial septum. Hematoma was extending from foramen oval to mitral annulus and pulmonary veins. Hematoma was evacuated and the underlining rough surface along with the septum were patched with a pericardial patch. Minutes after coming back off the bypass machine, intraoperative TEE showed hematoma recollecting again in the LA underneath the patch. Patient was put back again on bypass and patch and hematoma were removed. Finally, TEE showed satisfactory results with no recurrence of hematoma. Patient was discharged few days later for follow up. Discussion: LA dissection is defined as the forced separation of layers of the left atrial wall by blood or fluids. It is a rare complication after mitral valve replacement or blunt trauma.

This case is unusual in several aspects. First: LA-d is induced spontaneously without any apparent precipitating factors. Second: few reports have described LA-d in which the dissection extended from the posterior wall to the interatrial septum. Third: the main presentation of our case was atrial fibrillation. The timely diagnosis of this rare condition may have saved the life of the patient.
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Discussion: LA dissection is defined as the forced separation of layers of the left atrial wall by blood or fluids. It is a rare complication after mitral valve replacement or blunt trauma. This case is unusual in several aspects. First: LA­d is induced spontaneously without any apparent precipitating factors. Second: few reports have described LA­d in which the dissection extended from the posterior wall to the interatrial septum. Third: the main presentation of our case was atrial fibrillation. The timely diagnosis of this rare condition may have saved the life of the patient.