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Giant true aneurysm of the right coronary artery button long after aortic root replacement

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A 50-year old male, affected by Marfan syndrome 23 years after a Bentall composite aortic root replacement, experienced mitral regurgitation. Preoperative coronary angiography and computer

tomography revealed significant aneurysmal dilatation of the origin of the right coronary artery. At reoperation, a true aneurysm of the right coronary artery button was found (Figs 1 and 2).

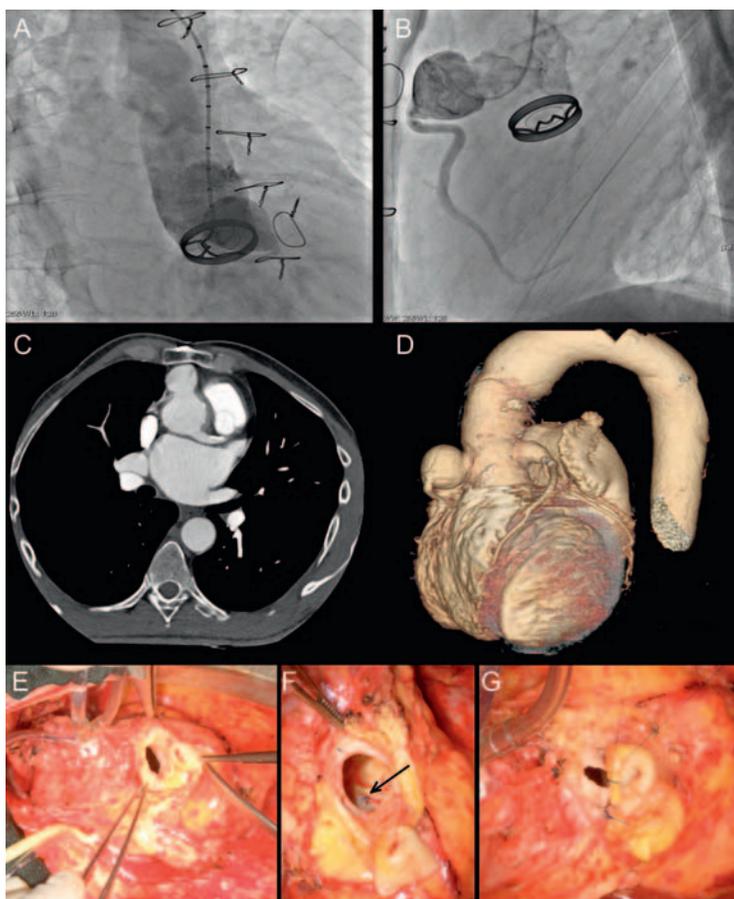


Figure 1: (A and B) Preoperative coronary angiography and aortography revealed significant aneurysmal dilatation of the origin of the right coronary artery. (C and D) Angio-computed tomography scan and 3-dimensional reconstruction confirmed the dilatation of the right coronary artery, located immediately beneath the posterior sternal table. (E) The coronary button comprised a significant amount of the native diseased aortic wall. No dehiscence of the anastomosis or pseudoaneurysm was evident. (F) A view of the suture line of the left main coronary ostium (arrow) through the right button. (G) After removal of the excess of the aortic wall from the right coronary button, a bovine pericardial patch was sutured on the original opening on the tube graft. A circular opening was created in the central part of the patch, and the coronary button was then anastomosed to the patch.

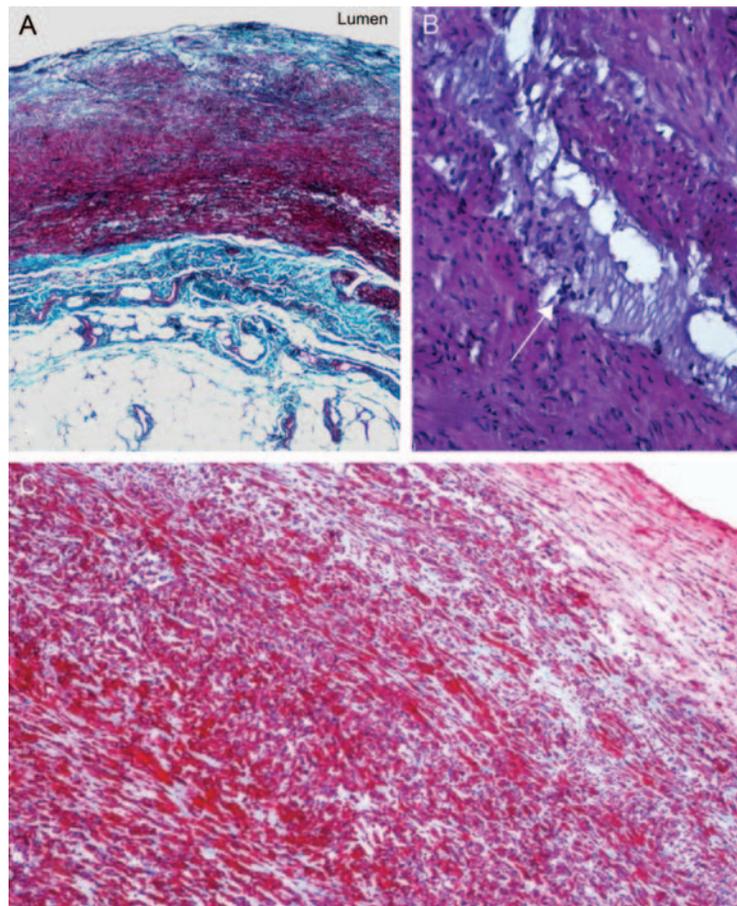


Figure 2: (A) A histological section shows intima thickening and severe media smooth-muscle cell hyperplasia (red) with a subtotal disappearance of the elastic fibres (black). (B) A histological section shows moderate media degeneration with a change in the orientation and hypertrophy of the smooth-muscle cells and loss of the normal elastic framework. Arrow shows focus on mucoid material (bluish accumulations of proteoglycans). (C) Immunohistochemistry for smooth-muscle actin, severe hyperplasia and tunica media smooth-muscle cells disarray.