A 38-year-old female who had undergone mitral valve replacement with a mechanical prosthesis was referred for a transient ischemic attack. She was afebrile, her blood cultures were negative, and there was no sign of endocarditis. Transthoracic echocardiography (TTE) showed a normally functioning mitral prosthesis with a mobile, pedunculated mass in the ventricular side of the aortic valve (Figure A). Transesophageal echocardiography (TEE) revealed a mobile gelatinous mass attached by a thin stalk to the ventricular side of the aortic valve (Figure B). The patient underwent resection and a 10 mm gelatinous mass was found on the non-coronary cusp of the aortic valve. The resected mass had a sea anemone-like shape (Figure C). Histological examination showed papillary proliferation with collagenous tissue and fibroblast infiltration (Figure D). The postoperative course was uneventful. Papillary fibroelastomas (PFEs) originate most commonly from the valvular endocardium (85%). The aortic valve is most often involved (29%). Clinical presentation of PFEs varies widely, ranging from asymptomatic to severe embolic events. PFEs are being recognized more frequently with TEE and should be differentiated from thrombi, vegetation, and myxomas. Symptomatic cardiac PFEs should be surgically removed, while asymptomatic lesions that are left-sided, mobile or larger than 1 cm should be considered for surgical excision.