Commentary: Papillary fibroelastoma resection—one and done?

Raj Verma, Akachukwu Nwakoby, BSc, and Bobby Yanagawa, MD, PhD

Contrary to popular belief, it may be that papillary fibroelastomas (PFEs), not myxomas, are in fact the most common primary benign cardiac tumor. They are characterized as having a central stalk with frond-like projections containing a fibroelastic core lined by a single layer of endocardial cells. Although small (<1 cm), PFEs can potentially embolize resulting in stroke, and even cardiac arrest. Mazur and colleagues retrospectively analyzed medical records from 294 patients who had surgical excision of PFE from 1998 to 2020. To our knowledge, this is the largest single-center series on PFE operative outcomes. Of the 294 patients, approximately one-half of patients had a stroke or transient ischemic attack. Seventy percent of PFEs originated on the aortic valve. In all, 46% of patients underwent surgery primarily for the removal of PFE, whereas 54% had secondary PFE resection. Most patients (98%) underwent tumor shaving, preserving the structural integrity of the involved valves. Although most of the operations performed were through median sternotomy, minimally invasive cardiac surgery should probably be considered, as is currently the case for myxomas.

A key finding of this report is related to tumor recurrence. The reported recurrence rate was 16% at 10 years, all in the aortic position, which is significantly greater than previously published recurrence rates of approximately 3%. This is further likely an underestimation, given that echocardiographic follow-up was only available in roughly one-half of patients. A previous publication from this group comparing 185 patients with surgically removed PFE with 326 patients with PFE treated with watchful waiting reported 6% versus 13% risk of stroke at 5 years, respectively. The fact that patients with complete resection still had 6% midterm stroke risk highlights the risk of tumor recurrence.

Several questions remain with regards to recurrence. With what frequency should echocardiographic follow-up occur? What modality—transthoracic versus transesophageal? (The authors recommend a transesophageal study 5 years after surgical PFE excision.) What are the risk factors for recurrence besides aortic valvular involvement? Given that 98% of tumors were shaved, is it possible that this is insufficient (was some tumor left behind on the valve, particularly in the aortic position) or did recurrences occur in completely new locations? If tumor recurrences do occur and reoperation deemed necessary, should the surgical approach be similar or more aggressive?

We congratulate the Mayo Clinic on an excellent publication summarizing their extensive operative experience with PFE resection over a 20-year period. Most surgeons such as ourselves only see a handful of PFE cases, and so this study is an important contribution to the literature. Clearly, PFE surgery, as with most cardiac surgery, is not one and done. We look forward to future reports from this group to help us to address the aforementioned unanswered questions.
References


