GUEST EDITORIAL

Prosthetic valve thrombosis: is it time for a new consensus conference?

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After cardiac valve replacement, complications may occur due to structural deterioration of the prosthesis and non-structural dysfunction including infection, embolism, thrombosis, and others.

The prosthetic heart valve thrombosis (PVT) used to be a very serious complication in this type of patients; however, it may be an incidental finding during an echocardiographic test.

Kaya et al. report a new case to the medical literature, particularly interesting, because the patient is a 82-year-old woman who was admitted in NYHA IV functional class, a frequent form of presentation, and with inadequate anticoagulation level. In this patient, the diagnosis has been done using transthoracic echocardiography (TTE). The first choice of treatment was the surgery, but the patient refused due to her clinical status. The thrombolysis with streptokinase was effective.

Transthoracic echocardiography is the diagnostic tool often used to evaluate a patient with valve prosthesis, when there is suspicion of PVT, and also is useful in the follow-up of patients during thrombolysis.

The transesophageal echocardiography shows images with more resolution, and also has high sensitivity to identify abnormal mass. It can be useful for differentiating thrombus and pannus. A study demonstrated that the probability of thrombosis is higher in patients with two or more predictors (INR ≤2.5, abnormal mass at an occlusor, elevated gradients and mobile mass). This difference is really important to begin the thrombolysis treatment. The therapeutic decision in patients with PVT is controversial yet.

The guidelines for management of left-sided PVT in 1997 proposed that surgery treatment should be the preferred therapeutic modality for most patients with PVT. Thrombolysis, followed by heparin, warfarin, and aspirin, is advised for high-risk surgical candidates. This therapeutic decision was based fundamentally on the occurrence of embolism.

Roudaut himself demonstrated that those embolic events, post-thrombolysis, were less frequent and more benign than previously thought. Alpert recommended in an editorial that guidelines should be revised and proposed thrombolysis for patients in NYHA classes III–IV as initial therapy, reserving surgery for the patients who fail to respond to this approach. Previously published results show a lower mortality with thrombolysis (13%) than surgery (33%) for NYHA Class IV patients with PVT.

On reviewing the published literature, Lengyel cited post-thrombolysis mortality of 5% vs. 30% post-surgery. In 89 NYHA Class IV patients from five different studies, late post-thrombolysis mortality was 7% compared with 17–54% post-surgery. In NYHA Class I–III patients, mortality was ~5% with both therapeutic approaches. In 2005, Lengyel published a letter in the Journal of the American College of Cardiology with the results of thrombolysis in 53 studies in different time periods (1974–1995 vs. 1996–2003). The number of treated episodes was similar at 235 vs. 234, success rate increased from 77 to 90%, embolic events decreased from 13 to 4%, and deaths from 7.5 to 2.5%. The author thus considers thrombolysis the first therapeutic choice in patients with PVT, independent of the functional class and the thrombus size, if there are no contraindications for it. Current data of surgical series have reported elevated rates of mortality. Durrleman et al. presented a series of 39 patients with PVT over a 20 year period who underwent thrombectomy or valve replacement with an associated mortality of 25 and 41%, respectively. Oskokeli et al., in 30 patients with left-side PVT, reported a post-operative early-hospital mortality of 7.1% (NYHA Classes II–III) and 31.3% (NYHA IV), and Toker et al. reported in 63 cases a total mortality of 20.6%.

In our experience of a series of 68 patients with a diagnosis of PVT treated with thrombolysis, therapeutic success was achieved in 62 patients (91.2%) and failure in 6 patients (8.8%). In NYHA Class IV patients, the success rate was 88.9% (32/36 patients). Systemic embolism occurred in five patients (three cerebral and two peripheral). We used recombinant streptokinase IV (250 000 UI/30 min and continuous infusion 100 000 UI/h, up to 72 h). This also appears to be the most widely used and recommended...
Despite advances in surgery, anesthesia, and perioperative care, the evidence is in favour of thrombolytic treatment for PVT because of its high effectiveness, easy applicability, low complication rate, and cost. In agreement with other authors, we use and recommend thrombolysis as the first therapeutic choice for patients with PVT, provided there are no contraindications, regardless of the degree of valve obstruction, NYHA functional class, or thrombus size. Surgery should be reserved for those patients with major contraindications or failure of thrombolysis.

References