Reviewer's report

Title: Effectiveness of anticoagulant therapy in the treatment of post-TAVI bioprosthetic thrombosis

Version: 1  Date: 10 October 2014

Reviewer: Dominique Himbert

Reviewer's report:

The authors report the case of thrombosis of a SAPIEN transcatheter valve which occurred 5 months after the procedure and was successfully treated with anticoagulant therapy.

General comments

This is an additional case of transcatheter valve thrombosis in the first few months after TAVI. It emphasizes that the diagnosis should systematically be considered in case of rapid increase of transvalvular gradients and confirms the effectiveness of anticoagulant therapy in such a setting. However, a number of similar cases have already been published, of whom several have unfortunately been omitted in the present discussion and references. Another issue raised by the paper is the indistinct use of the terms “pannus” and “thrombosis” for designing the same disease. The histology, location, timing of occurrence and treatment of both disorders are completely different. The present paper reports a case of thrombosis, not of a pannus. From a didactic point of view, making the difference is crucial.

Specific comments

• Page 1, background:
  o “Valve replacement represents a safe….”: Do you mean: Transcatheter valve replacement...
  o “Current guidelines empirically recommend single antiplatelet….: this is not the case. In most TAVI studies and programs, a double antiplatelet therapy with aspirin and clopidogrel has usually been advocated, at least for the first 3 to 6 months, in the absence of concomitant anticoagulant therapy.
  o Several references have been omitted and should be added:
    # Leetma et al. Two cases of thrombotic stenosis in SAPIEN XT valves after transapical implantation. EuroIntervention 2014; 10: 270
    # Maybe others, to be checked in PubMed.

• Page 1, case presentation:
  o “Annulus: 23m”. You mean 23mm
o “Mean gradient=30mmHg”: seems low for a severe aortic stenosis with normal LVEF.
o STS score should be mentioned

• Page 2:
o “without visible subaortic or thrombus obstruction”: However, figures A and B clearly show severe thickening of the leaflets, very suggestive of thrombus.
o Early degeneration has been evoked. Are there reports on bioprostheses degeneration 5 months after surgical or percutaneous implantation in the literature?
o “disappearance of the pannus”: there was no pannus, but leaflet thrombosis!
o Did the patient remain 3 months ½ in hospital?
o Discussion: The authors state that the overall durability of pericardial valves used in TAVI > 90% at 10 years. This is an extrapolation of the durability of surgical bioprostheses to transcatheter valves, which cannot be accepted. There are many differences between them, which may lead to important disparities in their durability. For transcatheter valves, the maximal follow-up does not exceed 5 to 6 years, and is much less for the large majority of patients.

• Page 3:
o The discussion of literature is not comprehensive, as several papers have been omitted.
o The authors wrongly use the term of pannus instead of thrombosis. Pannus is located on the ring of prostheses and constituted by fibrous tissue, not by thrombus. Here, there are obvious images of leaflet thrombosis on Figures A and B.

• References:
o Ref 1 is not adequate and should be replaced by the version 2012 of the guidelines published in the European Heart Journal.
o Ref 2 should be replaced by that in the European Heart Journal.
o All the references on the same topic which have been omitted should be added.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Declaration of competing interests:**
'I declare that I have no competing interests'