

**Title:** New Benchmark For Permanent Pacemaker Implantation In Surgical Aortic Valve Replacement Patients Affecting Selection Of Transcatheter Aortic Valve Replacement Patients

**Category:** Valvular Heart Disease

### **Abstract**

**Background:** In the last few years, a significant increase in the number of patients with aortic stenosis requiring surgical or transcatheter aortic replacement (SAVR) or (TAVR) has been observed due to the larger aging population. Conduction disturbances requiring permanent pacemaker implantation (PPMI) has been observed after SAVR and TAVR. In fact the incidence of PPMI following SAVR reached 11 to 13% while it occurred in 7 to 36% of patients undergoing TAVR. The majority of rhythm problems are secondary to a significant trauma to the conduction system.

**Methods:** In order to decrease the incidence of PPMI in patients undergoing SAVR, we developed a modified technique of SAVR that we applied on a group (B) of 59 consecutive patients. Then we compared the incidence of PPMI in this group to the one observed in a group (A) of 62 consecutive patients who underwent the classic SAVR. Surgery was performed by one surgeon in Saint George Hospital-university medical center. A biological aortic valve was used in all cases. In the first group (A) where the classic technique was performed, the sutures used were pledgeted 2.0 Ethibond with the pledgets applied below the annulus. In the second group (B) where the modified technique was achieved, the same 2.0 pledgeted Ethibond sutures were put below the annulus except for 3-4 sutures at the commissure between the right and non-coronary sinuses. They were applied above the annulus in order to avoid disturbances of the conduction system.

The incidence of PPMI was compared between the two groups.

**Results:** The incidence of PPMI was 14.6% in group A with a confidence interval of 95% while it was 3.4% in group B with a confidence interval of 95%. The incidence of PPMI was significantly lower in group B with a p value of 0.033 ( $<0.05$ ).

**Conclusion:** The low incidence of PPMI observed in the modified SAVR group encourages us to use this technique in all patients undergoing biological SAVR. In addition, this low incidence (3.4%) should be considered as the benchmark whenever low and intermediate risk patients are offered the TAVR option.