THE ENDOVASCULAR CORONARY SINUS CATHETER CAN BE USED SAFELY AND EFFICIENTLY DURING MINIMALLY INVASIVE MITRAL AND TRICUSPID SURGERY.

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ABSTRACT
Introduction (Abstract Submission): An endovascular coronary sinus catheter is installed in our institution to enable the administration of retrograde cardioplegia during minimally invasive mitral and tricuspid procedures. This is not an absolute indication as cardioplegia can be administered by the distal port of the aortic balloon securely and with efficacy as attested by many series of patients(1). However, administration of retrograde cardioplegia remains interesting, if not necessary, in certain patients to obtain asystoly. Nevertheless, difficult positioning technique, coronary sinus perforation risks inherent to manipulation(2) and high rate of displacement during the surgery accounts for its lack of popularity. We reviewed our experience from the beginning of our minimally invasive cardiac surgery program to determine the safety and efficacy of a protocolized approach to the utilization of an endovascular coronary sinus catheter.

Methods (Abstract Submission): After approval from the Institution Review Board, we revised the files for the patients admitted for a minimally invasive mitral or tricuspid surgery using a thoracoscopic approach from the beginning of our program in 2006. A protocol was rigorously followed for the insertion and positioning of the endovascular coronary sinus catheter. Ventricularization was confirmed by the anaesthesiologist after inflating the coronary sinus catheter balloon with less than 1cc of diluted contrast agent. Correct final position was accepted by the surgeon and the anaesthesiologist. Time was recorded during procedure by an assistant. Clinical success was defined jointly by the capacity of building a coronary sinus pressure greater than 30 mmHg during cardioplegia infusion (150cc /min or less) and asystoly.

Results (Abstract Submission): Data was collected from 96 files. A total of 95 endovascular coronary sinus catheters were installed (99.0%). The mean time to insert the catheter in the sinus ostium was 6.3 ± 8.4 minutes minutes. Only 13 % of the insertions took more than 10 minutes. Confirmation of an adequate position with fluoroscopy took an average of 9.1 ± 10.6 minutes for a mean total procedure time of 16.1 ± 14.1 minutes. Clinical success was achieved in 87.5% of cases. Ventricularization of the coronary sinus pressure curve was observed in 88.6% of cases. The presence of ventricularization was associated with an increase in clinical success (OR 15.8; 95% CI 3.713 – 67.239). Time to insertion and total time were not associated with clinical success rate. No complications were documented following CS catheter placement.

Discussion (Abstract Submission): Endovascular coronary sinus catheter installation can be done in an acceptable time frame with a high rate of clinical success and without complications. During positioning, obtaining ventricularization contrary to time is related to the success rate.

References (Abstract Submission): References

2. Abramson DC, Giannoti AG: Perforation of the right ventricle with a coronary sinus catheter during preparation for minimally invasive cardiac surgery. Anesthesiology 1998; 89: 519-21

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