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Para-proximal control for Para-ophthalmic Aneurysms

Ali Hassan Aljuzair MD
Ashraf Fayad, MD, FRCPC, Carolyn Lai, MD, Ashley Pardoe, MD, John Sinclair, MD, FRCSC
University of Ottawa, The Ottawa Hospital - Civic Campus

The Ottawa Hospital
L'Hôpital d'Ottawa

Introduction

Aneurysms of the para-ophthalmic segment of anterior circulation are not uncommon. Surgical treatment represents a significant challenges because of the narrow anatomic corridor of the internal carotid artery for proximal blood flow control. A status of no or minimal flow may be required during the procedure during aneurysm dissection and clipping. Rapid ventricular pacing (RVP) or induction of controlled pulseless ventricular tachycardia may provide an optimal surgical environment as a proximal control method in paraophthalmic aneurysms.

Methods

Three patients have been enrolled in this study until now. The RVP was achieved through central line transvenous pacing. The position of the pacemaker catheter in the right ventricle was confirmed utilizing transthoracic echocardiography imaging. Close communication with the anesthetic team was established for the exact timing of RVP initiation and termination. We aimed to limit the RVP duration for < one minute each time. All patients received the standard anesthetic monitoring in additiona to invasive arterial line.

Results

All patients received RVP for the procedure. The RVP was used on average of 5 times per case. A status of no flow was achieved in all patients as identified by loss of blood pressure and output through the arterial line. All patients tolerated the procedure well and there were no postoperative cardiac adverse events reported.

Conclusions

The RVP is feasible, safe and convenient to use during para-Opthalmic aneurysms surgery. It provides an excellent working environment and should be considered as standard of care in patients with para-ophthalmic aneurysm undergoing surgical procedure.

Learning Objectives

1- Study the anatomy of internal carotid artery and different blood inflow to para-ophthalmic aneurysm.

2- Review different methods of proximal control in para-ophthalmic artery aneurysms.

3- Study the efficacy and safety of RVC use in para-Opthalmic aneurysms.

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