

The Konno-Rastan Procedure for Anterior Aortic Annular Enlargement



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An anterior aortoventriculoplasty, known as the Konno-Rastan procedure, is a useful tool for the cardiac surgeon. Originally, described for congenital aortic stenosis secondary to small annular size, it relieves subvalvar, valvar, and supra-valvar stenosis. We show a step by step, illustrated, and safe approach to perform this operation. Although this is unusual anatomy outside the congenital arena, it is a relatively safe and straight-forward procedure. When compared with a homograft or xenograft root replacement, the Konno-Rastan has the benefit of not having to mobilize the coronaries as well as ease of valve replacement. Operative Techniques in Thoracic and Cardiovascular Surgery 20:219-233 © 2016 Elsevier Inc. All rights reserved.

KEYWORDS Konno, Konno-Rastan, aortic annular enlargement

Introduction

An anterior aortoventriculoplasty, known as the Konno-Rastan procedure, is a useful tool for the cardiac surgeon. Originally, described for congenital aortic stenosis secondary to small annular size¹, it relieves subvalvar, valvar, and supra-valvar stenosis. There is usually some intrepidation about the procedure, as it involves opening

the right ventricular outflow tract and then cutting through the aortic annulus and ventriculo infundibular fold into the ventricular septum. Although this is unusual anatomy outside the congenital arena, it is a relatively safe and straight-forward procedure. The Ross-Konno is more popular, but may not be the best in older patients or if the pulmonary valve has prohibitive pathology. We are also seeing patients who present with aortic stenosis after mitral valve replacement, and are no longer candidates for a Nicks or Manouguian procedure. When compared with a homograft or xenograft root replacement, the Konno-Rastan has the benefit of not having to mobilize the coronaries as well as ease of valve replacement (Figs. 1-11).

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Operative Technique

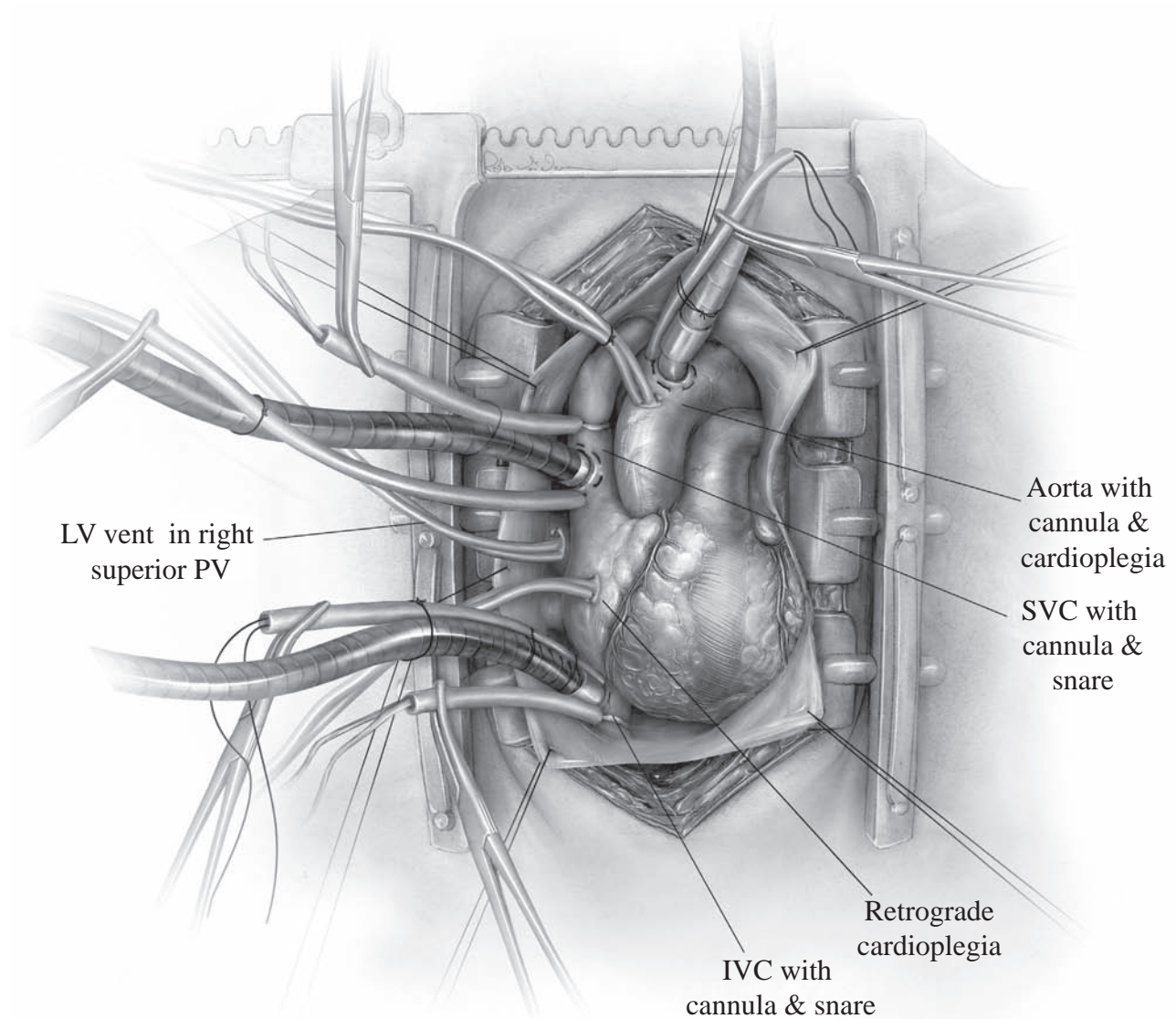


Figure 1 We prefer bicaval cannulation to have a bloodless field in the right ventricle during the case. We also place a left ventricular vent via the right superior pulmonary vein and a retrograde coronary sinus perfusion catheter. The aorta is cannulated just below the take off of the innominate artery to gain as much length as possible on the ascending aorta. Both the root and proximal ascending aorta will be enlarged with a patch. Therefore, the antegrade perfusion catheter should also be placed distal on the aorta. LV = left ventricle; PV = pulmonary valve; SVC = superior vena cava; IVC = inferior vena cava.

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