cannulation. The other subject that we wonder about is the cause of mortality in one case. It could be more favorable if the authors pointed out this issue.

Antegrade cerebral perfusion is being performed even when the point of deep or moderate hypothermic perfusion is controversial [4]. We believe that the safety and quality of distal anastomosis is the most important factor for mortality and morbidity, so we think that the quality of distal anastomosis is more considerable than wasting time. We use deep hypothermia, but moderate hypothermia can also be used with more experience.

An additional comment is that in case of dissection that advanced to left main and right coronary arteries with high-grade aortic insufficiency, bicuspid aorta and degenerative aortic valve disease, we prefer inserting composite graft first and then fixing the upper side of left main coronary artery with pledgeted sutures and suturing just lateral and upper side without down side because of intensive fragility during Bentall operation. Punching the composite graft near the valve and in a slightly horizontal position is enough to achieve this procedure.

In our opinion, the surgeon should avoid Bentall procedure as far as possible because resuspension of aortic valve is sufficient in 90% of the cases in acute terms; because of this, tissues become very fragile.

References


* Corresponding author. Address: Merdivenkoy Mah., Sairarsi Cad., Eminci-narpa Sok. No: 6/24, Goztepe/Kadikoy, Istanbul, Turkey.

E-mail address: drmates@yahoo.com (M. Ates).

doi:10.1016/j.ejcts.2006.08.001
I read the article by Tomioka et al. [1] with great interest, eager to see how intensely the new integrative knowledge of the heart structure and function might urge future reconciliation of some exceeded concepts about electrical, mechanical, and energetic events in human heart [2].

Contrary to evident contribution of the ventricular myocardial band (VMB) concept in developing the new strategy in failing heart surgery, there was no real proof in obtaining progress in clinical electrophysiology. Classical teaching describes ventricular excitation as the product of two temporally overlapping functions: endocardial activation and transmural activation. Endocardial activation is guided by the anatomic distribution and physiology of the His-Purkinje system, which depolarized most of the endocardial surfaces of both ventricles, within several milliseconds with activation fronts that move from endocardium to epicardium. Also, it was shown that ‘the anatomical conduction paths lie axially along the direction of muscular bands of the ventricle’ and hypothesis of that move from endocardium to epicardium. Also, it was shown that ‘the anatomical conduction paths lie axially along the direction of muscular bands of the ventricle’ and hypothesis of radial conduction of activation from endocardium to epicardium was questioned [3]. Taccardi et al. [3] has shown, by multisite mapping of electrical activation within ventricular wall, that the spread of activation fronts follows complex spiral pathways, rather than direct linear ones.

Renewed interest in the mechanism of spread of activation seems appropriate at the time when electrophysiologists are pushing the frontiers of understanding and treating the arrhythmias and defining the conditions and benefits of biventricular pacing in certain patients with severe myocardial dysfunction and intraventricular conduction abnormality. Stimulated electric impulse produces radial conductance that is much faster than normal axial excitation to cause regular sequential heart contraction. Radial direction of electrically stimulated excitation, which was founded by nearly all pacing studies, is quite opposite to axial course of conduction in physiologically guided excitation of normal myocardium. The significant differences in direction of evoked and natural electrical impulses and depolarization through the heart call for some fundamental changes in electrophysiologic-mechanical consideration. The question that arises from these statements is as follows: How can we improve the myocardial function in the patients with severe myocardial dysfunction and intra/interventricular conduction delay, by using biventricular pacing aimed at reducing electrical asynchrony? Or rather: How can radial (abnormal) spread of evoked myocardial activation produce physiologic sequential myocardial contraction in pump failing heart?

Leclercq et al. [4] concluded that improved mechanical synchrony and function do not require electrical synchrony. Mechanical desynchronization rather than electrical dispersion seems to be the more relevant measure [4]. The controversy in assessment of different pacing modalities on cardiac contractility in failing heart is greatly due to our lack of understanding on how pacing affects cardiac mechanism [5]. At present, it is not possible to identify patients who will respond better to left ventricular pacing alone, compared with biventricular pacing or neither and it is not clear how to identify optimal pacing site [4].

If anatomy means function, VMB concept of heart structure has to be starting hypothesis which should be widely tested. Mapping techniques in combination with sophisticated imaging system seem a promising methodology that could be the answer to problems of electro mechanical sequential activation of the normal and failing heart [4].

Remarkable results of Tomioka experimental studies, using original methodology, will stimulate further research in order to evaluate real benefit of resynchronization biventricular pacing therapy in failing human heart.

References


* Tel.: +381 11 3615 795; fax: +381 11 3615 795. E-mail address: velid@sezampro.yu.

doi:10.1016/j.ejcts.2006.08.018

Reply to the Letter to the Editor

Reply to Velimirovic.
Helical myocardial ventricular myocardial band; cardiac resynchronization therapy

Gerald Buckberg*

David Geffen School of Medicine at UCLA, 10833 Le Conte Avenue 62-258 CHS, Los Angeles, CA 90095-1741, United States

Received 24 August 2006; accepted 28 August 2006; Available online 26 September 2006

Keywords: Helical ventricular myocardial band; Biventricular pacing; Structure/function relationship; Functional mitral regurgitation

Insight into functional aspects of electrophysiology requires synthesis of form and motion during planning and enactment of pacing strategies [1]. Tomioka et al. [2] employed the helical ventricular myocardial band (HVMB) to determine if this spatial geometry model, together with prior knowledge about rapid axial and slower radial electrophyslogic conduction velocities, could explain cardiac resynchronization therapy benefits during heart failure.

A central theme is understanding how the anatomic distribution of the His Purkinje system that touches only a few millimeters of nerve myocyte connection, can effect sequential contraction following subsequent transmural impulse heart muscle transmission. Such knowledge requires recognizing differences between electrical activation and