

"Hearts for All": A Humanitarian Association for the Promotion of Cardiology and Cardiac Surgery in Developing Countries

To the Editor:

I read with interest the article of Cohen and colleagues [1], reporting a project which aims to train medical staff, treat patients with congenital heart disease, and promote the development of local centers in developing countries. I would like to congratulate them as well as the other organizations implicated, for the noble task they accomplish.

Our institution has been involved for more than 30 years in the care of children suffering from congenital or acquired heart disease, thanks to the collaboration of a Swiss foundation "Terre des Hommes," which refers these cases from certain African countries to our institution. Up until now, over 6,000 children have been sponsored and treated at the University Hospital of Geneva. However, for some time, the policy of humanitarian medicine has shifted away from transferring children to some host countries towards taking care of them in their local environment. An essential issue concerning this transformation is determining the type of organization that will deliver care focused on adequate treatment of patients, and also restructure usually inadequate infrastructures, and local human and financial resources. Moreover, I have observed that our role in humanitarian missions has also been shifted away from health-care providers towards health-care managers. In 1998, we modified our humanitarian vision according to these new demands of developing countries and created the humanitarian association "Hearts for All" in order to better shape the medical future of countries requesting our partnership. Requests usually come from countries that have failed to prevent rheumatic fever or are unable to screen congenital malformations before birth. An important population of patients accumulates and increases considerably every year, obliging health authorities to shift more resources from the prevention of disease to the promotion of infrastructures in local curative units. Irrespective of their suffering and unfair predicament, such patients impose a social and economic cost, which could be dramatically reduced if heart surgery and catheterization were available. In some developing countries, the presence of physicians trained in pediatric cardiology, anesthesiology, and particularly those trained in cardiac surgery increases the incentive to take care of these patients in their own local environment.

Currently, a new concept is evolving in humanitarian medicine: the creation of reference institutes where specific medical care can be provided under a single complex. For 3 years, we have cultivated this concept in Maputo, Mozambique together with different associations and have succeeded in creating a Heart Institute where I had the honor of initiating the first surgical mission. Since then, every month, cardiological and surgical missions are carried out by teams affiliated with these associations, and will continue until the Heart Institute is fully autonomous. The Institute is equipped with medical diagnostic units, an intensive care unit, operating theaters, and a research center. It will also be a training center for physicians, surgeons, anesthesiologists, and cardiologists for Mozambique and neighboring countries with the initial assistance of European associations. Moreover, a telemedicine program is under way, which will facilitate concrete actions throughout Mozambique and neighboring countries, and enhance expertise via contacts with European experts. Our association is now trying to create another similar regional reference institute between Togo, Benin, and Burkina Faso.

In conclusion, I believe that the future of humanitarian medicine resides within native countries where a new generation of enthusiastic and motivated practitioners await the challenge of treating their children themselves.

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Reference

1. Cohen AJ, Tamir A, Houry S, et al. Save a child's heart: we can and we should. *Ann Thorac Surg* 2001;71:462-8.

Reply

To the Editor:

I would like to congratulate Dr Kalangos and the University Hospital of Geneva for the large-scale humanitarian efforts being made at his institution over the last 30 years.

I agree wholeheartedly that the efforts of those helping with pediatric heart disease in developing countries should be focused on forming centers of competence in the local communities. To do this, I think it is critical that teams travel to local sites and work shoulder to shoulder with their partners. At the same time, I think it is important to allow key members of our partners the opportunity to train in major medical centers where they can have a clear understanding of the goals for their institution. In addition, while it is clearly not the most efficient use of resources, it would be impossible for those of us who see children who are in need immediately, not to provide that care in any way possible, despite the expense to our own institution.

Three points are worth making concerning Dr Kalangos' letter:

1. This form of medicine is cooperative, as opposed to competitive. Presently, there are many more children in need than there are those able to provide assistance. While our program and the Swiss program have some variations in the approach, they are accomplishing the same goal. There is more than enough room in the field for multiple individual approaches.
2. We at "Save a Child's Heart," have been working in this field for 6 years and yet were unaware of the extent of the program at the University of Geneva. This is very typical of this field where many individual efforts are being made without coordination between the groups. In my opinion, it would be appropriate for the large societies (such as STS or ECTS) through the international committees, to consolidate and coordinate efforts as well as monitor projects related to the treatment of pediatric heart disease in developing countries.
3. It is important that more and more discussion of this problem be addressed in our professional journals, so that cardiothoracic surgeons may be more aware of the needs and opportunities in this field. As we strive to accomplish globalization of cardiothoracic surgery in terms of audiences and surgical techniques, we also need to acknowledge the worldwide need of young patients who seek our help.

Again, I congratulate Dr Kalangos on his outstanding work and hope our programs will be cooperating in the near future.

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Induced Ventricular Fibrillation in the Management of Aortic Arch Trauma

To the Editor:

We read with interest in the May 2001 issue of *The Annals* the article by Dr Lim and associates [1]. In summary, the authors recommend that penetrating cardiac injuries be repaired during temporary cardiac arrest. This has been achieved in their clinical practice by intravenous injection of adenosine.

Temporary short-lasting circulatory arrest as an adjunct to repair injuries of the heart and the aorta was first recommended by the great Japanese surgeon Juro Wada in the 1970s [2] and reemphasized by us a few years later [3]. We found it a most effective and occasionally a life-saving situation, which greatly simplified suturing holes in both the heart and the aorta. We, however, applied artificially induced ventricular fibrillation, a maneuver that could be easily accomplished by homemade fibrillators, instead of pharmacologic ventricular asystole. Having used it in a good number of patients, we found it an easy and probably safer method than pharmacologic asystole to handle penetrating injuries of the large vessels of the heart.

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References

1. Lim R, Gill IS, Temes RT, Smith CE. The use of adenosine for repair of penetrating cardiac injuries: a novel method. *Ann Thorac Surg* 2001;71:1714-5.
2. Wada J. Electrically induced fibrillation in cardiac arrest and resuscitation. In: Stephenson HE Jr, ed. *Cardiac arrest and resuscitation*. St. Louis: CV Mosby Co, 1974:783-95.
3. Robicsek F, Matos-Cruz M. Artificially induced ventricular fibrillation in the management of through-and-through penetrating wounds of the aortic arch: a case report. *Surgery* 1991;10:544-5.

Reply

To the Editor:

We read with great interest the comments made by Dr Robicsek regarding our article [1].

We were not aware of Dr Robicsek's and Dr Wada's published reports in treating penetrating cardiac trauma with artificially induced ventricular fibrillation. Both methods are probably equally safe, but the advantage of adenosine-induced asystole is

that it renders the heart completely flaccid and much more amenable to manipulation, especially when dealing with injuries of the lateral wall. This indeed was our experience in both cases listed in the publication.

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Reference

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Cellular Myoplasty: What Are We Really Trying to Achieve?

To the Editor:

The article by Dr Pouzet and his colleagues in the March 2001 issue of *The Annals* [1] adds to a rapidly expanding body of literature assessing the efficacy of "cellular myoplasty" in preventing or reversing heart failure due to postinfarction left ventricular remodeling.

The implied hypothesis is that cellular myoplasty replaces cardiac myocytes, which are lost as a result of myocardial infarction. While attractive, this idea overlooks important aspects of myocardial structure and consequences of postinfarction ventricular remodeling. Two points need clarification.

First, normal myocardium is composed of cardiac myocytes and an intracellular collagen matrix, which are intimately related and necessary for effective cardiac performance. Myocardial infarction destroys both of these tissue types. Myocytes that are implanted randomly into an infarct in the absence of a viable collagen network to "harness them together" are unlikely to provide effective contractile force.

Second, postinfarction left ventricular remodeling results in the insidious development of heart failure over time [2]. Patients are initially hemodynamically compensated, indicating that they have a sufficient number of viable myocytes to maintain adequate cardiac performance. Over time, the remodeling process causes a myopathic process in normally perfused myocardium that leads to heart failure [3].

Given these two facts, it would seem to us that a strategy intended to prevent myocardial impairment secondary to left ventricular remodeling would be superior to one that proposes to restore ventricular function by introducing myocytes in an attempt to replace those lost due to infarction.

We hypothesize that the salutary effects attributed to cellular myoplasty in this study are in reality due to an alteration in infarct material properties, which ameliorate infarct expansion, therefore, limiting the myopathic effects of postinfarction left ventricular remodeling [4].

In our opinion, the rat model with its inconsistent infarcts, residual ischemic myocardium, and inability to adequately assess regionally contractility and geometry is not an appropriate

*Doctor Cohen passed away on Aug 15, 2001.