Cardiology in People's Republic of China in 1977*

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In 1973, a year after reestablishment of Sino-American communication and following two personal visits, I presented a report entitled "Cardiology in People's Republic of China." It is the purpose of this communication to bring up to date, four years and two more visits later, the more recent developments in the field of cardiovascular disease in China.

Coronary arterial disease continues to be the second most common cardiovascular disease in China, as it was in 1973. In combination with strokes, coronary arterial disease is the number one killer in China. In detection of cases, as well as in clinical diagnosis, China (which until 1973 used only Master's two-step test) now employs treadmills (Fig 1). The electrocardiographic stress test, which was not widely used in 1972, is now used in large-scale surveys in factories and communes in many major cities in China.

Although surgery for coronary bypass has been performed in China since May 1975 (on a 50-year-old man with intractable angina whom I saw in consultation during my visit to the Kwangtung Provincial People's Hospital, Canton, in 1975) and later also in Peking, the Chinese physicians and surgeons are far more cautious than their American colleagues, and rightfully so, in accepting the surgical treatment of ischemic heart disease. With the combined use of such modern Western drugs as practolol and propranolol (manufactured in China but called "Inderal," as many other Chinese-made Western drugs [such as "Miltown" and "Librium"] are frequently called by their brand names, rather than by their generic names) and traditional Chinese herbal medicines (including *Ligusticum wallichii* and ginseng), most of the Chinese patients with angina would respond to medical therapy; however, intractable angina is a definite indication to perform surgery for aortocoronary bypass. To me, this careful approach on the part of the Chinese seems not only medically wise but economically sound, so as not to direct resources away from other...
more important and perhaps more urgent aspects of medical care in China, where the total national resources for health care are more or less fixed. I wonder if there might not be a lesson to be learned by their American colleagues, in view of the recent controversy surrounding surgery for coronary arterial bypass in this country.

In the field of cardiovascular surgery, anesthesia via acupuncture, which was first used for intracardiac surgery with extracorporeal circulation in 1972 in the Shanghai Third People's Hospital, Shanghai Second Medical College, Shanghai (where I had my internship), is still being used in both congenital and acquired defects. The Shanghai Third People's Hospital provided the following list of the open-heart operations that were performed under anesthesia by acupuncture during the period of 1972 to 1977:

- Ventricular septal defect: 98
- Tetralogy of Fallot: 30
- Atrial septal defect (ostium secundum): 26
- Ruptured sinus of Valsalva: 17
- Mitral stenosis or regurgitation (or both): 8
- Trilogy of Fallot: 7
- Partial atrioventricular communis: 6
- Pulmonic stenosis: 4
- Total: 190

The following significant changes have been adopted in the performance of open heart surgery under anesthesia by acupuncture since my last report in 1973:

1. A disposable bubble oxygenator has now replaced the disk oxygenator, with the addition of hypothermia and cold cardioplegia;
2. Instead of just an electrocardiogram (as in 1972), simultaneous monitoring of the ECG, electroencephalogram, arterial blood pressure, and arterial blood gas levels is now used routinely during operations (Fig. 2);
3. Endotracheal intubation is employed in patients with cyanotic heart disease, such as tetralogy of Fallot. All of these measures undoubtedly contribute to the continued success of open heart surgery under anesthesia via acupuncture in China.

Recently, an herbal medicine called Flos daturae has been used successfully as an anesthetic agent for open heart surgery. Cardiovascular stability is
one of the major features of this form of intravenous anesthesia, which has gradually replaced anesthesia via acupuncture in several medical centers in China.8

In the field of valvular cardiac disease, up until recently, the Chinese have been reluctant to use cardiac valvular prostheses, and commissurotomy and valvoplasty have been the principal surgical approaches. The first artificial mitral valvular replacement performed under anesthesia by acupuncture in China (on a 22-year-old man with severe mitral stenosis that was beyond repair) was done by the same team of the Cardiovascular Research Group of the Kwangtung Provincial People's Hospital in Canton that performed China's first operation for aortocoronary bypass. Now such operations are being increasingly used with success in major cities such as Peking, Shanghai, and Wuhan. The Chinese, who formerly imported cardiac catheters and vascular prostheses, are now making their own for clinical use (Fig 3).

In my second annual Paul D. White Lecture, entitled "Cardiology in People's Republic of China," which was delivered in 1973, I mentioned that:

China has made several advances in the field of cardiology and shares many common interests with the United States in this field, especially coronary artery disease. We can learn a great deal from each other in our continuing efforts to surmount the scourge of this common heart disease. Coronary heart disease knows no international boundary. We can reach the common goal sooner if we share information and resources together and cooperate in a concerted team effort.1

There have been increasing interchanges between the Chinese and American medical professions during recent years; however, these interchanges are still not enough to bridge the large gap existing in spite of the vast amount of knowledge acquired by each in the past few years. During my latest visit to China in the summer of 1977, I saw a clear-cut sign of genuine interest on the part of the Chinese scientific community, medical profession, and major political leaders to speed up basic scientific and clinical research and to learn from the advanced technology of foreign countries. I sincerely hope that for the sake of both countries and the world at large, the exchanges between the American and Chinese medical professions shall continue and that their pace shall be greatly accelerated during the next few years.

REFERENCES
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