The True Heroic Pioneers of Cardiovascular Surgery

As a member of the Honorary Committee of the *Revista Argentina de Cardiología*, I would like to express an opinion on the latest editorial "From Heroic Surgery to Ecclesiastes" (1), written by our esteemed colleague Dr. Jorge Trainini. I believe that to call a procedure of doubious rationality like the one performed by C. Hufnagel –who implanted a valve in the descending aorta in patients with aortic regurgitation– a heroic surgery with biblical implications, means not to disclose the true heroes of the beginnings of valve surgery. It began with Cutler, (2) in 1923, on a pediatric patient (although it was not a valve implant), and it was a true heroic act: the surgical management –with survival– of a mitral stenosis in an 11-year old girl. Undoubtedly, this was the starting point of valve surgery, and of the development of cardiovascular surgery, as evidenced in the works mentioned below:

I do not intend to make an accurate historical account of cardiovascular surgery, since I may incur in omissions. Nevertheless, I will try to recall some heroic historical events that occurred before the development in series of the extracorporeal circulation (1955), which have been forgotten due to the passing of time.

In 1953, in Boston, R. Gross (3) performed the closure of a persistent ductus arteriosus. In 1944, A. Blalock (4) performed the first subclavian-pulmonary anastomosis on a 15-month-old boy with tetralogy of Fallot. In Sweden, also in 1944, C. Crafoord (5) performed surgery on a 12-year-old boy with aortic coarctation, taking advantage of previous experimental works of R. Gross, in Boston. Simultaneously, that same year, J. Alexander (6) published an aortectomy for thoracic aneurism in an adult. In 1945, Sir R. Brock (7) performed an instrumental valvotomy for an acute pulmonary stenosis. In 1949, O. Abbot (8) used a plaque of cellophane to cover a thoracic aneurysm. Simultaneously, in 1949, Hufnagel (9) implanted a graft into the thoracic aorta. In 1952, more numerous and sophysticated techniques were published by D. Cooley and M. DeBakey. (10) Since 1950, mitral valve surgery in adults began with C. Bailey (11); then Harken (12) began mitral valve surgery in adults, and that same year, C. Bailey (13) performed an instrumental dilation for aortic stenosis in an adult. In 1952, W. Muller and J. Dammann (14) performed the pulmonary artery cerclage for hypertensive pulmonary congenital malformations due to hyperflux. That same year, John Lewis (15) performed successful closure of ASD with the aid of hypothermia using temporary closure of the cavas. In 1953, C. Bailey (16) also published a ASD closure through an atrioseptopexy. In 1953, J. H. Gibbon (17) used extracorporeal circulation for an ASD closure for the first time.

In my opinion, what can be considered heroic surgeries are those performed by C. W. Lillehei, (18) who, in 1955, published a series of thirty two patients operated under direct vision, including tetralogy of Fallot, cross circulation, and a hemocompatible relative as donor (Figure 1). There were no failures in the donors. Late outcomes, thirty years after those heroic procedures, were published (19) in 1986 by the same authors.

Finally, and simultaneously, extracorporeal circulation in series began to be applied in 1955, oddly in the month of March, just 80 miles way, with C. W. Lillehei at the University of Minnesota, and J. W. Kirklin (20) in Mayo Clinic (Rochester - Minnesota).

Since then, cardiovascular surgery has spread all over the world, and its advances are countless and almost unlimited in all fields, both for newborns and adults or the elderly.

To sum up, this historical account, probably with some unintentional omissions, intends to remind young professionals of the true heroic pioneers of the beginning of the specialty.

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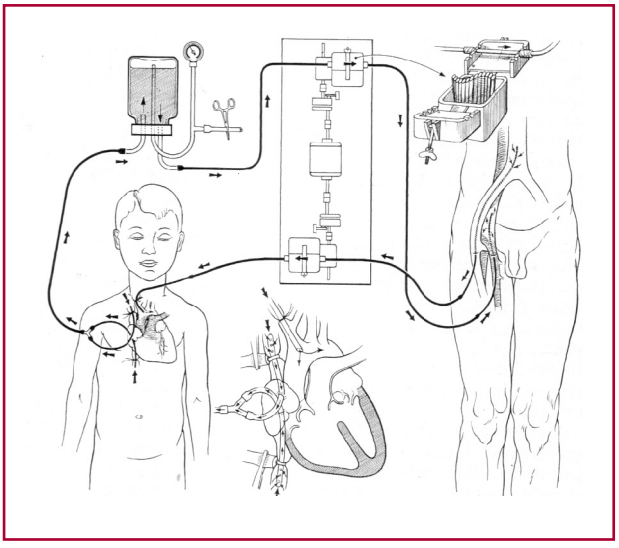

Fig. 1. Cross circulation system used in 1954 by C. W. Lillehei.

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