

Paediatric Cardiology Hall of Fame

Adib Domingos Jatene

Vera Demarchi Aiello, Ieda Biscegli Jatene Bosisio¹

Laboratory of Pathology, Heart Institute (InCor), University of São Paulo Medical School; ¹Hospital do Coração da Associação do Sanatório Sírio, São Paulo, Brazil

OUR COUNTRY OF BRAZIL HAS THE TRADITION of being the home of great cardiac surgeons. At the beginning of the era of cardiac surgery, Brazilian surgeons in training, like those in many other developing countries, looked for opportunities in famous cardiological centres overseas, where the pioneers had recently achieved success with newly introduced techniques. Nowadays, we are proud to have our own schools for cardiac surgeons, and to export original and innovative ideas, contributing to the progress of the surgical art. The outstanding individual whom we induct here to the “Paediatric Cardiology Hall of Fame” is certainly responsible for the greater part of the reputation our country has acquired during this evolution of knowledge in cardiac surgery.

Born on the 4 June, 1929, in Xapuri, a small town of the Amazon region of Brazil, in the north-west of the country, and at the border of the rainforest, Adib Domingos Jatene (Fig. 1) was brought up as one of the beloved four sons of Lebanese immigrants, Domingos and Anice. After the death of his father from yellow fever, when Adib was no more than two years old, the family remained in the Amazon region for seven years. But, in order to offer a better education for the children, his mother then decided to move to the state of Minas Gerais, in the south-east of Brazil. Once settled in Minas Gerais, Adib concluded his elementary schooling in Uberlândia, but was then sent, with two of his brothers, to São Paulo in order to finish high school. His passion for the exact sciences made him think about Engineering for his future career to embrace, but finally he chose Medicine. His interest in Engineering, nonetheless,



Figure 1.
Adib Domingos Jatene photographed in 2001.

was of paramount importance later in his life, when he used his skills in the development of devices and machines related to cardiac surgery.

In 1948, he entered the School of Medicine of São Paulo University, where he graduated in 1953. He had already started, as a student, his training in surgery under the solid orientation of Prof. Euryclides de Jesus Zerbini, the pioneer of cardiac surgery in Brazil. In 1951, he had participated in the first valvar commissurotomy performed in our country, in a patient with mitral stenosis. The great enthusiasm generated by this procedure led him to change his original plans completely, which had included a return to his birthplace and dedication to preventive medicine. Instead, he stayed in São Paulo after graduation, and trained for two more years in cardiac surgery.

Correspondence to: Vera D. Aiello, Laboratory of Pathology, Heart Institute (InCor), University of São Paulo Medical School, São Paulo, Brazil. Tel: +55 11 3069 5252; Fax: +55 11 30695279; E-mail: anpvera@incor.usp.br

Accepted for publication 26 June 2002

The first professional activities

Between 1955 and 1957, having moved to Minas Gerais with his growing family, he introduced thoracic surgery in the region, and built his first heart-lung machine. Passionate about his subject, he taught Topographical Anatomy at the School of Medicine of Uberaba, a city located in the South of Minas Gerais. Interested in understanding the surgical anatomy of the normal and malformed hearts, he then started to prepare anatomical specimens in a fashion different from the traditional approach of the pathologist. After preserving the anatomy through careful fixation, Adib opened the hearts according to the surgical approach. This innovative strategy contributed greatly, in those early days of cardiac surgery, to the proper recognition of malformed structures seen during the operation.

But Professor Zerbini once again requested his talent, so Adib returned to São Paulo, where he joined the growing team of Cardiac Surgery at the University Hospital, staying there until 1961. He then left the University service, and dedicated himself to the Department of Surgery and the Experimental Research Laboratory at Dante Pazzanese Institute of Cardiology. During this period, he coordinated groups of multidisciplinary professionals in the development of a program that began with the construction of heart-lung machines, and evolved into huge departments of Bioengineering, still in operation nowadays at the Heart Institute of São Paulo University and at Dante Pazzanese Institute. Aware of the economical difficulties of the country for the importation of prostheses and other cardiovascular devices used in America and Europe in the era of open heart surgery, Adib once more demonstrated his ingenuity and creativeness. With a team of technicians, engineers, and doctors, he adapted different materials and techniques for the construction of valvar prostheses, along with bubble and membrane oxygenators. An implantable cardiac pacemaker was also manufactured, using the resources available locally. Some parts were purchased from the electronics street market in São Paulo, with epoxy coming from a branch of a European firm. The batteries were imported from the United States of America. Some of the products developed those days were improved over the years and patented, being still in use nowadays at the most important cardiovascular centres in Brazil and other countries.

The original technique for the correction of discordant ventriculo-arterial connections

Creativity in Medicine, and especially in Surgery, requires a great deal of daring, not to mention discipline, determination, and luck. Taking advantage of

being extremely skilled in the technique of coronary arterial bypass surgery, as well as of his striking interest in morphology, Adib faced the challenge and proposed a technique for the anatomical correction of the combination of concordant atrioventricular and discordant ventriculo-arterial connections, combining the switch of the arterial trunks with reimplantation of the coronary arteries into the “new aorta”.¹ Also revealing his extraordinary wisdom and clinical aptitude, he and his team from the Dante Pazzanese Institute made the right choice when selecting their first candidates for the operation. They chose patients in whom the left ventricle was already prepared, in other words, those with a ventricular septal defect as well as discordant ventriculo-arterial connections. Other surgeons had previously made attempts to achieve anatomical correction, and some had even considered such correction to be unfeasible,² but the world of cardiac surgery was astounded when, in 1975, Adib presented the report of his first successful case at the Henry Ford Symposium, and later published the technique in the *Journal of Thoracic and Cardiovascular Surgery*.³ Nowadays, his technique is used worldwide as the first choice for correction of transposition in the setting of an intact ventricular septum in neonates. Although some modifications and “maneuvers” have been described or added to the original technique, the eponym of the Jatene procedure is well known in any tertiary center devoted to the correction of congenital cardiac malformations. Along with other giants like Blalock, Mustard, Kirklin, Fontan, Barnard, and Cooley, his name is recognised as being responsible for one of the most important events in the history of cardiac surgery, namely the first successful arterial switch operation for correction of discordant ventriculo-arterial connections.

A new approach to reconstruction of the left ventricle after ischaemic aneurysm

Once again exercising his acute sense of observation and knowledge of anatomy, Adib proposed an alternative means of reconstructing the left ventricle after formation of an ischaemic aneurysm. His proposal is based on the concept that the size of the orifice between the aneurysm and the ventricular cavity is much larger than the originally infarcted area. The usual straight suture line performed after resection of aneurysm by simple approximation of the rims of the orifice distorts the ventricular geometry. Since a complete restitution to the previous shape is not possible, he proposed that the orifice should be reduced concentrically, and finally an unstretchable double Dacron patch should be placed over it. Such an approach permits correction of the aneurysm with minimal distortion of the ventricular cavity. Additionally,

operating on a beating heart made it possible to observe the anatomy more closely, and also to construct the most appropriate patch for the individual.⁴ The excellent immediate and long term results obtained by him and other surgeons with this technique validated his proposition, and brought him additional prestige among his peers around the world.

Administrative work and University positions

Due to his outstanding capacity for leadership, Adib has occupied the position of head of the most important Cardiological Societies in Brazil, such as the Brazilian Societies of Cardiology and of Cardiovascular Surgery. Together with other brilliant cardiologists from the south-east, he was one of the founders, and the first president, of the Society of Cardiology of São Paulo State. He has also occupied the presidency of international societies, such as the International Society for Cardiovascular Surgery, a position he held from 1985 to 1987.

Following the retirement of Professor Zerbini in 1983 (Fig. 2), he took over the position of Titular Professor of Thoracic Surgery of the São Paulo University School of Medicine. In 1990, for a period of four years, he was the Dean of this Medical School. Concomitantly, he worked as one of the Directors of the Heart Institute of São Paulo, known locally as InCor, until his retirement from the University in 1999 (Fig. 3). Under his solid guidance, the experienced group of cardiac surgeons of the Heart Institute instituted the second phase of the programme for heart transplantation in adults and children, beginning in 1986, and extending to the present day. He also stimulated the development of vanguard surgical techniques for both congenital and acquired cardiac diseases.⁵⁻⁷ At a recent estimate, it is calculated that

approximately 90,000 cardiac surgical procedures have been performed by the teams led by him in the different institutions he has directed.

But it was his great work as Secretary of State for Health, and Health Minister, which gave him great popularity in the country. Between 1979 and 1982, he was the Secretary of Health for the state of São Paulo. Over this period, he implemented several programs directed to the improvement of the basic and preventive health care. More importantly, he was able to negotiate internal and external financial support that permitted the programs to continue even after he had left. During this period, he was also able to continue with some of his surgical activities.

In 1990, he became Minister of Health for the nation, staying for a period of 8 months. Then, in 1995, he was again invited to take up this position, staying this time for 22 months. During his second term of office, he faced the dilemma of managing the public health in the absence of an appropriate budget. He devised a plan to finance the system that takes care of the health of the low-income population, proposing a provisional contribution on financial movement, meaning that a fee of 0.2% should be paid from every cheque written in the country. The National Congress approved the law, but the Ministry of Health never received the funds, so Adib reluctantly submitted his letter of resignation. During his stay in Government, nonetheless, he adopted efficient measures to control fraud in the health insurance system, and called the attention for the need of national campaigns for the control of infective diseases, implementing crucial programmes for educational.



Figure 2.
From the left, Professor Zerbini, Aurice Jatene, and Adib Jatene, pictured during a celebration at the Heart Institute of São Paulo in the mid 1980s.



Figure 3.
Adib and Aurice, pictured during the homage paid to him in the occasion of his retirement from the University of São Paulo in 1999.

Two of the social programmes of which he is most proud of are the “Community Health Agents”, and the “Family Health”. Introduced while he was the Minister, and carried out by the municipalities, they are devoted to primary health care, offered by community agents specially trained to give the first attendance and preventive advice at the homes of the people located not only in the poor areas of the north-east, but also in the outskirts of metropolitan regions. The number of community agents increased from 29,000 in 1995 to 160,000 in 2002. They now work in more than 4000 municipalities, taking care of around 90 million people.

Awards and publications

The recognition for his important contributions to both cardiac surgery and health care in Brazil has meant that he has received many awards over the years. Among the 178 titles awarded from more than ten countries, he is proud of being distinguished with the National Scientific Order of Merit “Grã-Cruz”, and of his election as a Member of the Brazilian Academy of Medicine and as “Honorary Fellow” of the American Association of Thoracic Surgery, American Surgical Association and American College of Surgeons.

He has published more than 700 scientific papers, as author or co-author, in the national and international medical literature, many of them achieving a significant index of citation.

The Family

It is now 48 years since Adib Jatene married Aurice Biscegli. They met during their years at University, where Aurice studied nutrition. They have four children (Fig. 4) and 10 grandchildren (Fig. 5). It was the strength of their alliance that enabled him to dedicate his time almost fully to his career. Despite the few moments he had to spend with his children, he learned how to make up for that with extraordinary love and care, as well as setting a good example, showing them the moral values to follow through life. So healthy was his relationship with the children that three of them became doctors: Fábio and Marcelo are cardiac surgeons, and Ieda is a paediatric cardiologist. The other daughter, Iara, is an architect. The impartial attitude always adopted by Adib and Aurice permitted the children to develop their own talents, and to find their own way in life. Obviously close to his medical children, Adib also maintains a close relation with Iara, since he is involved in all kinds of art.

His grandchildren (Fig. 5) certainly renew his energy. He is a good grandfather, devoting time to schoolwork and sporting activities. With the older



Figure 4.
Marcelo, Ieda, Fábio and Iara, the sons and daughters, photographed in 1999.



Figure 5.
Adib, Aurice and their ten grandchildren, pictured in 1998.

ones, he usually discusses subjects like politics and health, always listening to their opinions, believing deeply that he can learn from them.

Present and future

Adib is a person of very simple habits. Still living in the city of São Paulo, he wakes up very early every morning, and usually goes jogging for an hour before tackling his activities. He appreciates Brazilian romantic singers like Roberto Carlos and Maria Bethânia. As recommended to his patients, he avoids sweets, and does not smoke or drink. Retired from his administrative and surgical work at the Heart Institute of São Paulo University, he has retained a private surgical practice at Hospital do Coração do Sanatório Sírio. But those who might imagine that his activities are restricted to those described above will be completely mistaken. Adib remains an extremely active citizen. Among other occupations of different natures, he regularly writes articles for daily newspapers about subjects like public health and economy. One will not be surprised, moreover, to watch him on television

giving an interview at his farmland named Palmeiras, in the interior of the state, about techniques of soya bean plantation, with the same enthusiasm he dedicates to the medical or social subjects. Everything he embraces is taken with extraordinary passion. A statement that defines his way of being is that “There is no Science without Humanism; scientific development is only conceived if directed towards the well-being of people”.

Talking to Adib is always an exercise in optimism. He likes to think that the future of any individual is the natural consequence of what he or she has done before in life. So, we can easily appreciate that he will continuously act as an exceedingly creative individual, directing his efforts to obtaining what, at that specific point of his life, he strongly believes is of worth. As he comments, “I prefer 1000 times the tears of defeat than the shame of not having fought”, confessing that this aphorism was stolen from the bumper sticker on a truck! “Isn’t that a beauty?”, he remarks.

Challenges are, and always will be, welcome to our honoured colleague. As he concludes, “Nobody likes to deal with difficult things; the secret is to find an

easier way to do them”. It is our privilege and pleasure to introduce him as the newest member of our growing “Hall of Fame”.

References

1. Jatene AD, Fontes VF, Paulista PP, et al. Successful anatomic correction of transposition of the great vessels. A preliminary report. *Arq Bras Cardiol* 1975; 28: 46–64.
2. McGoon DC. Intraventricular repair of transposition of the great arteries. *J Thorac Cardiovasc Surg* 1972; 64: 430–434.
3. Jatene AD, Fontes VF, Paulista PP, et al. Anatomic correction of transposition of the great vessels. *J Thorac Cardiovasc Surg* 1976; 72: 364–370.
4. Jatene AD. Left ventricular aneurysmectomy. Resection or reconstruction. *J Thorac Cardiovasc Surg* 1995; 89: 321–331
5. Jatene AD, Moreira LF, Stolf NA, et al. Left ventricular function changes after cardiomyoplasty in patients with dilated cardiomyopathy. *J Thorac Cardiovasc Surg* 1991; 102: 132–138.
6. Moreira LF, Seferian P Jr, Bocchi EA, et al. Survival improvement with dynamic cardiomyoplasty in patients with dilated cardiomyopathy. *Circulation* 1991; 84 (Suppl 5): III296–302.
7. Barbero-Marcial M, Riso A, Atik E, Jatene AD. A technique for correction of truncus arteriosus types I and II without extracardiac conduits. *J Thorac Cardiovasc Surg*. 1990; 99: 364–369.