Profiles in Cardiology

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John B. Barlow: Master Clinician and Compleat Cardiologist

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John Brereton Barlow (Fig. 1) was born in Cape Town, South Africa, in 1924 and was educated in Johannesburg. He was well known as a rugby player and obtained his “letters” at the university as a lock forward (equivalent to a guard or tackle in American football). Because he elected to go into the army during World War II, his medical school career was interrupted temporarily. After the end of the war, he returned to Johannesburg and graduated from medical school in 1951. He trained in medicine, surgery, and pediatrics at Baragwanath Hospital in Soweto (an acronym which stands for South West Township, a city situated southwest of Johannesburg) for three years and then spent three years of postgraduate training in London, mainly at the Postgraduate School of Medicine at Hammersmith Hospital with Sir John McMichael. Under McMichael he was exposed to the view that current dogma must always be carefully examined, and he has done so throughout his productive years with valuable results. He had so much respect for McMichael that, in 1961, when he became Chief of Cardiology at the University of the Witwatersrand (literally “white water reef” under which the gold lies), he named his cardiac catheterization laboratory at Johannesburg Hospital the McMichael Cardiac Catheterization Laboratory.

The following story, which illustrates how Barlow followed McMichael’s doctrine, was told to me recently by his school-mate Dr. Bernard Tabatznik, who was working with Barlow at Baragwanath Hospital in the mid 1950s and later moved to Sinai Hospital, Baltimore, in the late 1950s. A robust black man was admitted to the hospital with pulmonary edema. Because his electrocardiogram was normal and he had a fever and eosinophilia, the differential diagnosis was left heart fail-

ure versus an unusual form of bronchopneumonia. A detailed history revealed that several family members and friends of the patient had been admitted to area hospitals with similar complaints. So Barlow and Tabatznik went around to all the hospitals, tracking them down, and also to the area from which these patients came, so as to interview other family members. The latter were quite cooperative except when they saw Barlow, because they were all convinced that Barlow was a policeman and thus would not talk in his presence. Barlow and Tabatznik with Pocock (a long-time colleague of Barlow’s) eventually wrote a paper together on this epidemic of acute eosinophilic pneumonia.¹

Barlow entered the international cardiology scene in 1963 with publication of his landmark paper on the midsystolic click and late systolic murmur,² subsequently known as the Barlow syndrome. It was Barlow who demonstrated that the midsystolic click(s) and late systolic murmur were in fact associated with billowing of the mitral valve leaflets and mitral regurgitation, respectively. Previously, the click(s) and the murmur had been considered extracardiac in origin.³ Barlow’s discovery was so controversial at the time that it did not win acceptance easily. In fact, Barlow’s paper was not accepted for publication in the journal *Circulation* to which it was first submitted. Tabatznik had the foresight to convince Barlow to publish a short version in the *Maryland State Medical Journal* in February 1963.⁴ Barlow’s full article was later published in the October 1963 issue of the *American Heart Journal*.² When Barlow visited Baltimore the following year, Victor McKusick, who was the “Heart Sounds” editor of *Circulation* during the time when Barlow’s original article was rejected, could not have been more gracious. He offered Barlow the Conjoint Clinic forum at the Johns Hopkins Hospital and subsequently published Barlow’s presentation in the *Journal of Chronic Disease*.⁵ Also, it was during Barlow’s visit to the Johns Hopkins Hospital in April 1964 that he met John Michael Criley who introduced the term “prolapse” of the mitral valve.⁶ Although Barlow never liked using the term prolapse and preferred the term “billowing” mitral leaflet,⁷ he had the highest respect for Criley. As a matter of fact, Barlow originally interpreted the left ventricular cineangiograms of his patients with midsystolic click and late systolic murmur as showing a subvalvular ventricular aneurysm until Criley pointed out that the protrusion occurred during ventricular

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FIG. 1 John Brereton Barlow.

systole and emptied completely during diastole. Then Barlow readily accepted that it was the posterior leaflet of the mitral valve that billowed into the left atrium and not a subvalvular ventricular aneurysm which filled. Barlow always gave Criley credit for this observation.^{5,8}

Although Barlow confirmed the diagnosis of mitral regurgitation in the first seven of his patients with midsystolic click(s) and late systolic murmur by cineangiography after retrograde catheterization of the left ventricle, he subsequently was able to confirm his findings in a much larger series of patients noninvasively by observing the effect on the click(s) and murmur of alteration in the hemodynamic state brought about by either vasoactive drugs or various maneuvers including the Valsalva maneuver.⁷ Once the Barlow syndrome was recognized and accepted as a definitive entity, it gained worldwide attention. It has now become the most common valve disorder in the world.⁹

In practice in Johannesburg for over 35 years, Barlow has patients from all walks of life, ranging from the underprivileged black children from Soweto to the South African President Mandela to whom Barlow is personal physician. He utilized the opportunity to practice cardiology in an environment where the broad spectrum of clinical material combined with the sophisticated means of investigation and treatment is unique. Thus, he has been able to take advantage of this unique situation to expand his research and publish on many topics, including rheumatic carditis,¹⁰ submitral left ventricular aneurysm,¹¹ restriction-dilatation syndrome,¹² and so forth, in addition to the Barlow syndrome. Barlow has maintained a keen interest in cardiac auscultation and emphasized the importance of history and physical examination throughout his professional life. As he so aptly put it in the Dedication of his textbook *Perspectives on the Mitral Valve*,¹³ "To all students of medicine who listen, look, touch, and reflect; may they hear,

see, feel, and comprehend." This is why I chose to call Barlow a master clinician and compleat cardiologist.

Barlow and I have been close friends for many years. We share a common interest in mitral valve prolapse, although I started with my work on midsystolic click and late systolic murmur in papillary muscle dysfunction¹⁴ and coronary artery disease.¹⁵ We collaborated on a chapter on mitral valve billowing and prolapse in my book *The International Textbook of Cardiology*⁷ and also on an article on the worldwide prevalence of mitral valve prolapse.⁹ We do not always agree on everything. Barlow would never let me forget what he thought of balloon valvuloplasty for tricuspid stenosis,¹² which I discussed in my book *Percutaneous Balloon Valvuloplasty*.¹⁶ However, we are never afraid of speaking out on those things we believe in. Thus, we have become very close friends, as have our families. One can tell the kind of man Barlow is from a few of his iconoclastic aphorisms, which can be seen on a plaque on the wall of the Duroziez Conference Room in the Johannesburg Hospital which I visited not long ago (Fig. 1).

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