and beds suitable for respiratory care resulted in the formation of a complete unit with various interrelated modules. This concept has been accepted by a committee of the American College of Chest Physicians. The complete committee report is published elsewhere in this issue (see page 554). The crucial factor in the development of critical care units is the commitment to a system of care by the hospital staff which is capable of providing enlightened care for all medical emergencies.

The intensive care unit team may simply include the attending physician and his well-trained nurse. The team is ideally bolstered by a variety of consulting specialists. Training necessary for modern-day intensive care is within reach of most physicians through short postgraduate courses and is often offered through the Regional Medical Programs. Therefore, it is recognized and fully agreed that all teaching, as well as major community hospitals, need a capability for intensive care of all causes including respiratory care and the units of the 70's should be mod!

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Left Ventricular Function and Myocardial Contractility in Chronic Constrictive Pericarditis

The pathophysiology and resulting symptoms and signs of constrictive pericarditis have been extensively studied and frequently reported. Paradoxically, however, relatively little is known about the function of the myocardium itself in constrictive pericarditis. The paper by Drs. Vogel, Horgan and Strahl on left ventricular dysfunction in chronic constrictive pericarditis which appears on page 484 of this issue is therefore timely and welcome.

It has long been suspected that a “myocardial factor” may contribute to the circulatory derangements in chronic pericarditis and account in part for the slow recovery frequently observed in patients after pericardectomy for chronic constrictive pericarditis.1,2 Fundamentally, what one needs to know in this connection is the contractile state of the myocardium in constrictive pericarditis.

In patients with myocardial disease, impairment of myocardial contractility can be assessed from a decrease in Vmax3 and in the velocity and relative extent of circumferential fiber shortening, the former especially at that time in the cardiac cycle when left ventricular tension is at its height.4 Furthermore, the effects of abnormal loading conditions upon these measurements are sufficiently small to justify their use in assessing the contractile state of the myocardium in patients with valvular disease.3,5 Under all of the foregoing circumstances, the demonstration of impaired left ventricular function may be taken as prima facie evidence for impairment of the inherent contractility of the left ventricular myocardium.

Matters are not so simple in the case of chronic constrictive pericarditis. For example, as the authors properly point out, the lesion responsible for loss of compliance may reside in the epicardium, myocardium or both. Furthermore, in constrictive pericarditis, impaired left ventricular function does not necessarily indicate a decline in the contractile state of the myocardium6 because the disease process in the epicardium may itself alter the measurements employed in the calculation of parameters from which the state of myocardial contractility is assessed.

Dr. Vogel and his associates describe in detail their methods and calculations. In their normal subjects the left ventricular volumes at the end of systole are smaller than those usually reported by others7 and this, together with the somewhat smaller than usual end diastolic volumes, accounts for the high ejection fractions. The data from their “normal” subject deviate considerably from the mean and should perhaps be excluded.

Dr. Vogel and his colleagues present convincing data to document impaired left ventricular function in patients with chronic constrictive pericarditis. This disease is becoming more uncommon, but the authors were able to study four patients, two before and after pericardectomy. Two patients had only postoperative studies. The number of studies is small for the purpose of deriving good statistical comparisons between normal subjects and patients with untreated constrictive pericarditis, or between

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pre- and postoperative patients. Nevertheless, the trends in constrictive pericarditis are clear. End diastolic volume, stroke volume and the ejection fraction are reduced, while end systolic volume is increased. Reduction of end diastolic volume was not found in all the cases and in some was not severe. This finding is consonant with the observation that the heart in chronic constrictive pericarditis is not of necessity small. The maximal velocity of circumferential fiber shortening and its absolute and relative extent are reduced, as is the rate of shrinkage of left ventricular volume.

The authors rightly conclude that chronic constrictive pericarditis is accompanied by severe dysfunction of the left ventricle, consistent with decreased contractility; but they wisely refrain from citing this conclusion as proof that the contractile state of the left ventricular myocardium is in fact impaired. Rather, they leave the door ajar to the possibility that the left ventricular dysfunction may be produced, in whole or in part, by the constrictive pericarditis itself.

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APROPOS OF THE HERING-BREUER REFLEX

Joseph Breuer (1842-1925) whose name is known to a wide circle only through his early association with Freud, was not simply a well-known physician in Vienna, as he is sometimes described, but also a man of science of considerable standing. Freud described him as “a man of rich and universal gifts” whose interests extended far beyond his professional activity. In his youth he had done some notable work under Ewald Hering on the physiology of respiration, where he discovered its automatic control. Breuer’s subsequent researches into the function of the semicircular canals were a permanent contribution to scientific knowledge. He became a Privatdozent in Vienna in 1868, but withdrew into private practice in 1871 and refused Billroth’s offer to propose him for a professorial title. In May 1894 he was elected Corresponding Member of the Vienna Academy of Sciences. He was one of the most highly thought of physicians in Vienna and was the family doctor to Bruecke, Exner, Billroth, Chrobak and others of their standing.

Jones, E: Sigmund Freud (Edited and abridged by Trilling, L and Marcus, S), Basic Books, New York, 1961

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