Relationship between these disciplines is admirably exemplified in the book, *The Pulmonary Circulation and Interstitial Space*, by Dr. Alfred P. Fishman and Dr. Hans Hecht (University of Chicago Press, 1969). In their introduction to this volume, the authors state:

"The main business of the lungs is gas exchange. Moreover, there is little doubt that most of this business is transacted, according to standard physical principles, at the alveolar-capillary interfaces. But there is some uncertainty about the basic design of these interfaces.

Until a few years ago, each interface was pictured as a membrane composed of two layers: one alveolar, the other capillary; in between was the interstitial space. Since the contents of the interstitial space were not known, the space was usually shown as empty. In time, the picture proved to be an oversimplification . . . .

Not only is the interstitial space part of the barrier to alveolar-capillary exchange, but it also constitutes the immediate pericapillary environment. Moreover, since the pericapillary space is continuous with the interstitial spaces elsewhere in the lung, conditions in the pericapillary space are not only determined locally, that is, not only by the adjacent alveoli and capillaries, but also from afar, for example, by an increase in systemic venous pressure sufficient to impede lymphatic drainage from the lung . . . .

A second feature . . . was a consideration of the basic mechanisms which control the behavior of vascular smooth muscle in general, and of pulmonary vascular smooth muscle in particular. Not very long ago it was uncertain whether hypoxia caused pulmonary vasoconstriction. Now that this question is settled, the time has come to ask how this constriction is effected. Does pulmonary vasoconstriction involve the same basic mechanism as constriction of smooth muscle elsewhere? Are there characteristic electrical changes which accompany the mechanical events of contraction? Are there physicochemical peculiarities? Why do pulmonary arterioles constrict, whereas systemic arterioles dilate upon exposure to hypoxia? To answer such questions, it seemed reasonable to examine the electrophysiological behavior of vascular smooth muscle.

The third aspect . . . . was a consideration of the part that the pulmonary circulation plays in the coordinated response of the heart and circulation to stress. Almost all of the observations that have been made along this line have been made during steady-state exercise, and the results interpreted in terms of calculated vascular resistance. But much remains unknown. For example, the role of the pulmonary nerves in the coordinated response to exercise is entirely unclear. Also, although steady-state exercise may be a convenient laboratory tool, it is only a particular type of stress. But to approach the problem of stress and the pulmonary circulation, more has to be known about the physical properties of the pulmonary vessels and contiguous structures; some idea must be gained about how nerves and transmitter substances can affect the pulmonary circulation, and a more comprehensive way has to be sought to assess performance than by conventional indices such as calculated peripheral resistance."

Alfred Soffer, M.D., F.C.C.P.
Chicago

References


Reprint requests: Dr. Soffer, 112 East Chestnut Street, Chicago 60611.

The Revolutionary Scalpel

"The spring wind of Mao Tse-tung's thought sweeps every corner of the country"—so begins a report in a recent issue of *China's Medicine* on the successful removal of a 45 kilogram retroperitoneal neurofibroma from the abdomen of an ailing "class sister," a farmer's wife named Chang Chiu-chu. Unlike its counterpart in the capitalist or revisionist journals, the case report of Chang Chiu-chu is not a mere chronicle of dry facts or a scientific discussion of their clinical implications; it is an impassioned plea for adherence to Mao Tse-tung's principles (his name appears 81 times) and a renunciation of those espoused by "China's Khrushchov" (mentioned only 17 times)—the generic name for "renegade Soviet revisionists," one of whom refused to operate on Chang Chiu-chu because he misdiagnosed the tumor as an inoperable lymphosarcoma.

On hearing of this counter-revolutionary revisionist line "of China's Khrushchov," the party committee of the PLA unit issued a directive from Mao's teaching, "Heal the sick and wounded," to treat Chang Chiu-chu's disease "with devoted loyalty to Chairman Mao's revolutionary line." Whereupon, acting on Mao's precepts, the unit organized a study course, during which, after properly denouncing the "heinous crimes" of China's Khrushchov it proceeded to plan the strategy of the surgical attack. All members of the unit participated in the preparation. "With increased proletarian feeling for the poor and lower-middle peasants, the anesthesiography group studied and worked day and night. In order to work out a suitable incision, medical workers, fighters and cooks all contributed their ideas." The cooks used a basin as a model for mapping out the incision. The patient herself was suitably "armed" with Mao's thought by an especially assigned health worker who inculcated in her a "boundless love" for the leader and a hate for his neighbors.

opposite number. "Down with China's Khrushchev!" she wrote, with the aid of her health worker who guided her hand, and looking up to Chairman Mao's portrait, she exclaimed "With your brilliant leadership, I shall be saved." Thus fortified, she entered the operating room with "revolutionary optimism."

In the operating room, its walls decorated with Mao's portraits and quotations, "the tense battle began." Lasting more than 12 hours, with five comrades alternating as chief operators and assistants, the operation was interrupted only by the political guidance group, which helped the operators to decide on a course of action when problems arose. Thus, when the patient became cyanotic they loudly quoted from Mao's work, "What we need is an enthusiastic but calm state of mind and intense but orderly work." Whereupon the anesthetist replaced the machine by a self-made anesthetic can. Heeding another Mao precept, "Our duty is to hold ourselves responsible to the people," the operators decided to lengthen the incision to 95 centimeters; and, acting in accordance with his military principle, "Attack, disperse isolated enemy forces first," they divided the adhesion around the tumor before attending to the blood vessels; thus, in the course of the operation, they overcame numerous hazards "under the guidance of the ever-victorious thought of Mao-Tse-tung."

When, after a 12-hour vigil, the news of the operative success reached the cadres and the fighters waiting outside the operating room, cheers rose, "Long live the victory of Chairman Mao's proletarian revolutionary line!" And, with the spread of the happy news, hundreds of thousands of revolutionary people from distant places, carrying flags and Mao's portraits, came to congratulate the team. With boundless gratitude to Chairman Mao, the patient constantly repeated, "It is Chairman Mao who has given me a second life."


The Sarcoid Polemic

A century has passed since Jonathan Hutchinson first described a patient with unusual skin lesions (1869) and thereby opened the door of the sarcoid controversy. While other diseases have fallen to the advance of medical science, sarcoid has been elusive and new information concerning it often has served to confuse more than to elucidate. As with most phenomena which appear inscrutable, opinions become polarized sharply, resting often times on matters of faith and conviction rather than on fact. So it is with sarcoid. In general, two schools of thought exist: one, which considers sarcoid a syndrome caused by a number of inciting agents, and the other, which views sarcoid as a unitarian disease of yet-to-be-demonstrated etiology.

The position of the "syndromists" is rather safe, not going beyond what is currently known that a number of agents have been unequivocally demonstrated to produce the histologic lesion of noncaseating granuloma and simulating sarcoid clinically. On the other hand, the sarcoid "unitarians" argue from platforms which frequently rest on foundations of semantics and tautology, lending an air of sophistry to their polemic. For instance, the unitarian would argue that sarcoid, in the present state of knowledge, is a disease by exclusion. He contends that in a patient with clinical sarcoid, the isolation of a pathogenic agent, such as an acid-fast bacillus, a fungus, or a noxious agent such as beryllium known to cause noncaseating granuloma, constitutes proof which excludes the granulomatous reaction from the realm of sarcoid, or simply denotes another disease process coexisting with sarcoid. The implication of such a concept, brought to its logical extension, is that the unitarian will admit to no etiology, at least for the present time.

REFERENCES


Reprint requests: Dr. Vaisrub, 535 North Dearborn Street, Chicago 60610.