terms of what is needed and what is likely to become available. There is a real need for better agents for the acute management of accelerated hypertension. Intravenous therapy with short-acting compounds such as nitroprusside and methaphen requires constant observation, whereas with other agents (parenteral Reserpine, Aldomet, or ganglion-blockers) the desired effect often is either delayed in onset or accompanied by unpleasant side effects. Since antihypertensive therapy as presently constituted is usually required continuously for the duration of the patient's life, initiation of chemotherapy in any patient cannot be taken lightly. In most patients we are still a long way from the goal of uniform and easy control of blood pressure without discomfort or hazard.

In the near future we may expect further refinements in the area of sympathetic neuronal inhibition. Other guanidine compounds are already being studied in patients in the hope of finding an agent that does not possess the disadvantages of guanethidine, such as diurnal variation of response and occasional production of severe diarrhea. Investigations of chemical and physical events at the sympathetic nerve ending and the effects of drugs thereon will undoubtedly yield further practical results in the same general area. Attempts to inhibit synthesis of norepinephrine with enzyme inhibitors is tending to shift away from the decarboxylase step toward the final step, the hydroxylation of dopamine by dopamine-β-oxidase. Several compounds that inhibit this enzyme in animal tissues have been discovered, but in general they appear to be too toxic for clinical trial. It is only a matter of time before potent, safe agents are found. A better understanding of the mechanism of action of current drugs, such as α-methyl-dopa, might be rapidly translated into development of even more effective agents. The worthwhile acute action of parenteral diazoxide is deserving of further study. Over the horizon may lie a compound with the hypotensive properties of the thiazides but without troublesome effects on electrolyte balance. Also, the area of aldosterone antagonists may prove rewarding.

When one gets beyond the considerations just mentioned, predicting becomes most difficult. While most experts consider that many factors are involved in the pathogenesis of hypertension, fields of investigation other than electrolyte metabolism and autonomic function have not yielded potent antihypertensive drugs. Developments applicable to treatment may be expected to appear in studies in other research areas that superficially may appear unrelated to the problem of hypertension. A broad perspective would be required to make extrapolations to therapy. Said in another way, a degree of strabismus may prove more rewarding at times than clear and direct vision. Then again, though we may prefer the logical and sequential, history indicates the importance of the accidental discovery and the screeing program. Rest assured, however, that regardless of how we get there, some day the flower will be all white.

Albert Sjoerdsma

General Principles

An underlying philosophy, when it can be found, is invaluable in practice, not only because it quickens and maintains interest, but because it forms a stable guide to action when experience fails, as it often will in face of the unusual, to give precise or particular direction.—Sir Thomas Lewis. Diseases of the Heart. New York, The Macmillan Company, 1933, p. vi.


**Medicine: A Universal Bond**

Leaving aside the strengthening of the formation of a scientific and cultivated spirit, leaving aside the sustained effort of constant renewal of our intellectual baggage, a task which rests within ourselves and in our schools, there exists a factor which may come to our aid, and that is international cooperation.

I understand it as a generous disposition of spirit, shared by all in our field across the length and breadth of the earth, to break down those national barriers which shelter selfishness and self-sufficiency, if not suspicion; to open doors to outside ideas from whichever country they may come, demanding only that they be well founded; to cooperate in the projects of others, asking only that they be noble and of promise; to aid in the development of scientific schools which, being small or newly founded, ask for more help; I understand it, that is to say, as an impulse of intellectual comprehension, of human sympathy, of universal awareness.

There is nothing better for the encouragement of such a movement than our Congresses. Years ago in our meeting in Washington, imbued with this idea, I stated that there was no profession like ours for learning the secret of living together and helping each other. "The truth is that we are," I said, "a group cast in the same mould. It matters little that the metal was cast in Europe or in Africa, in Asia or in America. It matters little that the metal is fair or dark. The mould is always the same, ecumenical and eternal. It is the legacy of our forefathers in Egypt and in Greece and it is in which, one day, our descendants will be cast." Going on I added, sustaining my assertion, "We who love medicine have been given by it a peculiar trait: we can never achieve possession of it and are indeed possessed by it as by a demon within us. Once it covers us it is like the tunic of Neso that could never be removed."—Dr. IGNACIO CHÁVEZ. Speech delivered at the Inaugural Ceremony of the IV World Congress of Cardiology. Universidad Nacional Autónoma de México, México, D.F., 1962, p. 9.
CALCIFIC EMBOLIZATION

strated focal myocardial infarcts in three of five patients who had undergone aortic valvotomy for calcific aortic stenosis, and in all three they had resulted from calcific emboli to minor coronary arteries. In the present study, myocardial necrosis caused by calcific emboli occurred only twice in the series of 61 emboli to the myocardium. The remaining emboli, however, may have had untoward effects on an already compromised or failing myocardium without causing actual death of the myocardial fibers.

Summary

Calcific emboli were observed in 38 of 62 patients (61 per cent) who died at varying intervals following aortic valvotomy for calcific aortic stenosis. Major coronary embolization occurred in 10 patients (16 per cent) and was considered to be a major cause of death of four patients. Minor coronary embolization occurred in 33 patients (53 per cent) and was not directly implicated as a cause of death in any patient. Calcific emboli occurred to other organs in eight patients (13 per cent). The techniques instituted for reducing the incidence of embolization—occlusion of coronary ostia, diligence in detection and removal of any debris, and final aspiration of the left ventricle—appeared to have had a favorable effect.

References


Head and Hand in Experimental Medicine

To be worthy of the name, an experimenter must be at once theorist and practitioner. While he must completely master the art of establishing experimental facts, which are the materials of science, he must also clearly understand the scientific principles which guide his reasoning through the varied experimental study of natural phenomena. We cannot separate these two things: head and hand. An able hand, without a head to direct it, is a blind tool; the head is powerless without its executive hand.—Claude Bernard, M.D. An Introduction to the Study of Experimental Medicine. New York, The Macmillan Company, 1927, p. 3.

Circulation, Volume XXVIII, August, 1963


William Withering

The comparative leisure which those years at Stafford had afforded for scientific pursuits now began to bear fruit, and in the summer of 1776 Withering published his first book and the one on which his reputation as a general descriptive botanist rests. This was entitled "A Botanical Arrangement of all the Vegetables Naturally Growing in Great Britain with Descriptions of the Genera and Species according to Linnaeus." This was the first complete flora of the British Isles in English, the works of Thomas Johnson and Ray and others being in Latin, and the herbal of John Gerard being extremely incomplete. In two volumes and bound in what the booksellers called "old sprinkled calf," it was illustrated with twelve fine copper plates. Included was a description and an interesting picture of a microscope devised by Withering for botanical study primarily. Withering also contributed a description of this microscope and figure to the first edition of the Encyclopaedia Britannica. Withering's botany had many readers and passed through three editions in the author's lifetime. A fourth edition revised by his son and containing four volumes was published in 1818. For fifty years it was extensively read. There were several reasons for its popularity. In the first place, natural history and botany had become popular and fashionable pursuits during the eighteenth century. The works of Linnaeus and Buffon, and the descriptions of the flora of India, China, South Africa, Australia and the New World, sent in by amateur and professional botanists, a large number of whom, by the way, were physicians, and the work of such naturalists as Gilbert White, had given natural history more of a vogue than radio-set making or golf has now. An examination of Withering's work shows many reasons why it should have become a best seller. He devoted much space to matters of interest such as natural places of growth of the plants described, their time of flowering, their economic uses as foods and drugs, and their poisonous properties. Methods of botanical investigation and how to dry and preserve specimens were included in his "Elements of Botany." He also gives the different English names used by the former herbalists Gerard, Parkinson, Blackwell, Culpepper and others. His book was in effect a translation of the herbalists in scientific form but written in English and not in Latin, and it was the first time that a really scientific classification and description of British plants had been published in the vernacular.—Louis H. Roddis, M.D. William Withering: The Introduction of Digitalis into Medical Practice. New York, Paul B. Hoeber, Inc., 1936, p. 34.
The coronary arteries were looked at before the time of Heberden; alterations were described and some symptoms noted, but the former remained as anatomic curiosities and all were buried until more inquisitive times. By giving to a group of symptoms a euphonious name that has survived until now, William Heberden (1768) opened a new chapter in nosography, and so the name deserves a brief consideration. "Angina" as a technical term came down from classic times, and for almost two centuries before Heberden it was used in England to designate cases of quinsy or sore throat in which a feeling of stran-
gling and anxiety entered. "Chest pang" was therefore an apt name for the syndrome that arrested Heberden’s attention. No theory was suggested, and the seat was indicated only in a general way.—George Dock, M.D. “Historical Notes on Coronary Occlusion: From Heberden to Osler. Frank Billings Lecture.” J.A.M.A. 113: 563, August 12, 1939.
edema. Atrial fibrillation was a very common finding.

Cardiac catheterization confirmed the presence of tricuspid incompetence and showed a "dip-and-plateau" contour in the right ventricular tracing. In addition the mean pressures recorded from the pulmonary artery and all parts of the right heart were virtually the same.

Two patients died and were examined post mortem. The findings included gross enlargement of the right atrium, complete disorganization of the tricuspid valve, and progressive obliteration of the right ventricular cavity. It is suggested that death may be due to gradual occlusion of the right atrium by antemortem thrombosis.

The condition must be distinguished from tuberculous pericarditis. Important factors in the differential diagnosis are the presence of tricuspid incompetence with systolic expansion of the neck veins, atrial fibrillation, and the demonstration of cardiac enlargement, due to aneurysmal dilatation of the right atrium.

Acknowledgment

The pressure tracings were recorded with apparatus obtained through a generous grant from the Nuffield Foundation, to whom we express our thanks. We are also grateful to the Medical Illustration Department, University College, Ibadan, for the illustrations, and, finally, we wish to thank those of our colleagues who kindly referred patients to us.

References


The Effects of Atmospheric Electricity on Muscular Motion

Now, indeed, the effects of storm electricity, as they say, having been investigated, not of thunder and lightning alone, it occurred to us also to test what sheet lightning and northern lights would produce in animals prepared in the customary way. Therefore we adapted our animals to an atmospheric conductor not only during lightning but during northern lights. But no contractions were ever then produced, perhaps because either such coruscations do not depend on electricity or, if they do, either in too remote a place, or they occur for some very different reason than thunderbolts. But these are questions for the physicists.—Luigi Galvani. Commentary on the Effect of Electricity on Muscular Motion. Translated by Robert Montraville Green, M.D. Cambridge, Massachusetts, Elizabeth Licht, Publisher, 1953, p. 39.


William Withering

William Withering was born March 17, 1741, at Wellington in Shropshire, England. The name was originally Withers and also Withering and Widdington. Whittington belongs to this same name group, a fact of interest as Dick Whittington of cat and Lord Mayor of London fame came from the West Country. Thomas Witherings was the first postmaster-general of England, appointed by King Charles I on July 31, 1635. The name, Withering, is probably of place or of occupational origin, a withering floor being the term applied to the drying floor of a malt house.

The great-grandfather of William Withering was James Withering of Cheswardine. His grandfather was also William Withering. His father, Edmund, was born December 30, 1712. His mother was Sarah Hector, born November 18, 1708, so she was somewhat more than four years older than her husband, whom she outlived twenty years, dying at the age of eighty-one. They had three children: Mary, who died in infancy, William, and Sarah, the youngest, born February 12, 1750.

Withering's father, Edmund Withering, was a physician and his mother belonged to a well-known medical family. She was a sister of Dr. Brooke Hector of Lichfield. Her father, Dr. George Hector, had delivered Samuel Johnson and so could have claimed the distinction of having ushered one of the greatest of men into the world. Another of her brothers, George Hector, and a cousin, Edmund Hector, both of whom became physicians, went to school with Johnson. Withering's mother was also distantly related to Bishop Hurd of Worcester.

MINORITY REPORT ON STRAIN AND TRAUMA

report does not conform to this instruction. An attempt has therefore been made here to repair what, in my opinion, is a major deficiency.

References

Principles of Research

The supreme task of the physicist is to arrive at those universal elementary laws from which the cosmos can be built up by pure deduction. There is no logical path to these laws; only intuition, resting on sympathetic understanding of experience, can reach them. In this methodological uncertainty, one might suppose that there were any number of possible systems of theoretical physics all with an equal amount to be said for them; and this opinion is no doubt correct, theoretically. But evolution has shown that at any given moment, out of all conceivable constructions, a single one has always proved itself absolutely superior to all the rest.—Albert Einstein. Essays in Science. New York, Philosophical Library, Inc., 1934, p. 4.

The Effects of Animal Electricity on Muscular Motion

The effects of stormy atmospheric electricity having been tested, my heart burned with desire to test also the power of peaceful, everyday electricity.

What more fitting, what more certain, than that it should be demonstrated that animal electricity is diffused to contiguous bodies by the nerves, and, not otherwise than common and ordinary electricity, is accustomed to be arrested by insulating and dispersed by conducting substances? These are the things which we have ascertained by experiment.—LUIGI GALVANI. *Commentary on the Effect of Electricity on Muscular Motion.* Translated by ROBERT MONTRAVILLE GREEN, M.D. Cambridge, Massachusetts, Elizabeth Licht, Publisher, 1953, p. 40.