EVALUATION OF DIURETIC AGENTS

Acknowledgment

We are indebted to Dr. S. Free, Chief statistician, Research and Development Section, Smith, Kline and French Laboratories for his assistance in preparing the statistical analysis. We would also express our appreciation for the technical assistance rendered by Miss Ellen Lippmann and Miss Regina Burns.

References


William Withering

Withering testified himself to his excellent upbringing. As respects his education, it was not remarkable. He received a good grounding apparently in the classical languages from a neighboring clergyman, the Reverend Henry Wood of Ereal, and passed through the usual course of study in mathematics, geography and history, necessary for entrance into the University. He seems to have been a good student but showed little in the way of either precocity or brilliance of intellect. His father desired him to study medicine and his own inclinations were toward his father's profession. In 1762, at the age of twenty-one, he entered the University of Edinburg, then becoming celebrated for the excellence of its medical school.—Louis H. Rodis, M.D. William Withering: The Introduction of Digitalis into Medical Practice. New York, Paul B. Hoeber, Inc., 1936, p. 4.

Circulation, Volume XXVIII, December 1963
13. Scott, Quoted by Campbell, M. and Deuchar, D. C.12

Science

We reverence ancient Greece as the cradle of western science. Here for the first time the world witnessed the miracle of a logical system which proceeded from step to step with such precision that every single one of its propositions was absolutely indubitable—I refer to Euclid's geometry. This admirable triumph of reasoning gave the human intellect the necessary confidence in itself for its subsequent achievements. If Euclid failed to kindle your youthful enthusiasm, then you were not born to be a scientific thinker.

But before mankind could be ripe for a science which takes in the whole of reality, a second fundamental truth was needed, which only became common property among philosophers with the advent of Kepler and Galileo. Pure logical thinking cannot yield us any knowledge of the empirical world; all knowledge of reality starts from experience and ends in it. Propositions arrived at by purely logical means are completely empty as regards reality. Because Galileo saw this, and particularly because he drummed it into the scientific world, he is the father of modern physics—indeed, of modern science altogether.

Aortic Incompetence

In 1715 Raymond de Vieussens (1641-1716) gave an account of the morbid changes and the character of the pulse in a patient with this valvular lesion, William Cooper having in 1703 described the change in the valves. The Royal College of Surgeons' Museum contains a specimen of aortic incompetence described by John Hunter. In 1829 Thomas Hodgkin (1798-1866) published a modest reference to "retroversion of the aortic valves," disclaiming any originality and saying that C. Aston Key had drawn his attention to it; Laennec and Bertin had indeed described this retroversion of the aortic valves. Hodgkin gave a good pathological and clinical account of the disease, noting the murmurs, the dilatation and hypertrophy of the heart, and the arterial pulsation, but did not anticipate Corrigan in his more complete account. Hodgkin's contribution would have been even more completely forgotten had it not been for the dutiful loyalty of Samuel Wilks and William Hale-White. In 1832 Hope described the jerking character of the pulse in cases combined with adherent pericardium and other lesions. Soon after this Dominie Corrigan (1802-80) independently published his paper "On permanent Patency of the Mouth of the Aorta, or Inadequacy of the Aortic Valves" (1832), which has perpetuated his name in Corrigan's pulse. Sir Humphry Davy Rolleston The Harveian Oration. Great Britain, Cambridge University Press, 1928, p. 44.
associated with a group of lesions consisting of aortic stenosis, endocardial fibroelastosis, mitral valve hypoplasia and insufficiency, coarctation of the aorta of pre ductal or post- ductal type, patent ductus arteriosus, and patent foramen ovale. This syndrome is regarded as a transitional or intermediate form between the hypoplastic left ventricle and aortic valvular stenosis of older children, and represents a distinct entity. Surgery has been performed successfully in a number of cases. Hypoplasia of the aortic annulus and ascending aorta and the presence of associated cardiovascular malformations place serious limits on the adequacy of surgical repair and the long-term prognosis.

References

Tricuspid Incompetence

Dilation of the right ventricle, like that of the left ventricle, was known to the early morbid anatomists; Lancais ascribed the jugular pulsation observed by Galen to dilatation of the right ventricle. Adams (1827) anticipated T. Wilkinson King in recognizing the safety valve action of the tricuspid valve.—SIR HUMPHRY DAVY ROLLESTON. The Harveyan Oration. Great Britain, Cambridge University Press, 1928, p. 48.
in the understanding and treatment of the symptoms that may appear if such an un-
toward reaction occurs. Furthermore, in the continuing development of new contrast
agents there should be additional effort made to lower their osmolality values.

Summary
Plasma osmolality and serum sodium concentra-
tions were studied in 30 children with a variety of cardiac abnormalities who under-
went selective angiocardiography. A significant increase of osmolality occurred, but
there were no significant changes in sodium concentration. The pathologic effects of hy-
pertonic solutions including contrast media are discussed and it is concluded that hyper-
tonicity is a preventable factor in serious re-
actions seen after angiocardiography.

Acknowledgment
We wish to thank Mr. Charles Hancock, who assisted
in the laboratory determinations.

References
1. Lasser, E. C., and Farr, R.: Significance of protein binding of contrast media in roentgen
5. Zinner, C., and Gottlob, R.: Morphological changes in vessel endothelia caused by con-
7. Sotos, J. F., Dodge, P. R., Meara, P., and Talbot, N. B.: Studies in experimental hyper-
8. Littrell, C. N., Finberg, L., and Drawdy, L. P.: Hemorrhagic encephalopathy induced
by hypernatremia. II. Experimental observations on hyperosmolarity in cats. Arch. Neurol.
9. Dotter, C. T., Wetchler, M. S., and Steinberg, I.: Contrast substances for angio-
10. Pendergrass, H. P., Tondreau, R. L., Pender-

Medical Etymology
An amusing example is found in the history of the word astragalus which today is the
name of a bone in the foot. It started off in Greek to mean a vertebra, especially in the
neck of sheep. How it moved from the neck of sheep to the foot of man is interesting. The Greeks of the Iliad carved their dice from the astragalos of the neck of sheep and
so the term came to designate one of a set of dice. The Roman soldiers much later took
over the word with this latter meaning but applied it to the heel bone of horses from
which they were accustomed to carve their dice—and from this it came into human anat-
omy. Whichever bone was used the resulting dice must have been very uneven, and to
risk much on the rolling of such “bones” might prove expensive.—O. H. PERRY PEPFER,
M.D. Opuscula Medica. (Reprinted from Transactions & Studies of the College of Physi-
cians of Philadelphia, 4 Ser., 18: 31, April, 1950).
Acknowledgment

We are indebted to Drs. W. Dye, L. Head, J. Hunter, O. C. Julian, W. R. Meadows, W. Neville, and J. T. Sharp for their excellent cooperation in making this study possible.

References


William Withering

Withering had always been interested in geology, mineralogy and antiquarian matters. He seems to have found time for still lighter things. He frequented the bowling green at Wolseley Bridge, was a member of an amateur dramatic club which presented Shakespeare in Shakespeare's own countryside, and took part in musical gatherings, being a performer on the flute and bagpipe. He had learned to play the latter in Scotland and he no doubt astonished his West Country friends with his performance on this instrument, then relatively unknown in that part of England.

Like many naturalists Withering was a lover of poetry and was particularly fond of those poets whose works contained allusions to natural objects and descriptions of scenery. It is known that at this time he read extensively in Tasso and Horace, as well as the poems of Miss Carter, Young's "Night Thoughts," and Thompson's "Seasons." He made a complete MS index of the latter for his own pocket copy. It was perhaps the study of this poem also that interested him in climatology. In any event, he began about this time to keep a meteorological journal.—LOUIS H. RODDIS, M.D. William Withering: The Introduction of Digitalis Into Medical Practice. New York, Paul B. Hoeber, Inc., 1936, p. 23.

The Capillary Circulation

The tercentenary of the birth of Marcello Malpighi, the father of histology, on 10 March 1628 and that of the De Motu appropriately coincide, for in 1661 he provided the final proof of Harvey's discovery by recognizing the capillaries in the frog's lung. He also saw the red blood corpuscles in the mesenteric vessels of a hedgehog, but as he regarded them as fat cells, Antony van Leeuwenhoek, "the immortal Bedell" as B. Ward Richardson christened him, who described them fully in his True Circulation of the Blood in 1686, has the credit of their recognition. Johannes Swammerdam, however, had actually noted the presence of red blood cells as early as 1658, but his observation was not made public until 1738 when Boerhaave brought out Swammerdam's Biblia Naturae. Luciani gives the credit of first seeing with a microscope the red corpuscles in the capillaries of a living animal (an embryo chick) to Lazzaro Spallanzani in 1771.—Sir Humphry Davy Rolleston. The Harveian Oration. Great Britain, Cambridge University Press, 1928, p. 8.


23. SODI-PALLARES, D., BISTENI, A., FISHLEDER, B. L., and MEDRANO, G. A.: Importance of the unipolar morphologies in the interpretation of the electrocardiogram: The theoretical basis of the unipolar morphologies and its correlation with vectorial analysis, with cardiac activation, and with the potential variations at the epicardial surface of the heart. Am. Heart J. 57: 590, 1959.

Conjectures and Some Conclusions

But much less easily could he deny double electricity in one and the same muscular fibre who should see that it is neither difficult nor without some sort of truth that the same fibre should have external and internal surfaces opposite one another, either having observed a cavity, which some assign to it, or from diversity of substances, of which we have said it is composed, which cannot be without various holes and surfaces of the muscular substance.—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. 61.
MODIFICATION OF ATRIAL SOUND


Diseases of the Pericardium

Raymond Vieussens in 1706 recorded the morbid appearances of pericardial adhesions and diagnostic signs of effusion into the pericardium. Joseph Exupère Bertin is quoted in 1824 by his son as having observed a case of acute pericarditis in 1739, but the first published account of the disease was by de Senne in 1749. Laennec described some of the physical signs of acute pericarditis, but stated that "of all the severe lesions of the thoracic organs three alone remain without pathognomonic signs to a practitioner expert in auscultation and percussion—namely aortic aneurysm, pericarditis, and polypi in the heart previous to death." Collin in 1824 was the first to give an adequate account of pericardial friction, which he compared to the creaking of new leather. Andral in 1829 recorded pericarditis in acute rheumatism, and in 1839 Bright said that he had long been aware of the association of pericarditis with chorea.—Sir Humphry Davy Rolleston. The Harveian Oration. Great Britain, Cambridge University Press, 1928, p. 14.
Acknowledgment
Dr. John W. Kirklin operated on the patient and was an adviser in the preparation of this manuscript.

References

Coarctation of the Aorta
This striking condition of narrowing or even obliteration of the aorta at or immediately below its isthmus, namely the portion between the orifice of the left subclavian artery and the insertion of the ductus arteriosus, was first described in 1789 by Paris, who came upon it in the course of injecting a body for dissection; Laennec had seen three or four cases and referred to four recorded cases of obliteration, including those of Graham, John Bell, and Ashley Cooper. An early case was in a man aged ninety-two years reported by Reynaud in 1828. Peacock collected forty-six cases in 1866, and in 1930 a total of 160 was analysed by Bonnet, who divided them into (i) the infantile or developmental with usually a diffuse narrowing at the isthmus, and (ii) the adult with a sudden constriction at the site of the ductus due to post-natal cæcilial contraction.—SIR HUMPHRY DAVY ROLLESTON. The Harveian Oration, Great Britain, Cambridge University Press, 1928, p. 48.

William Withering

Despite the demands of his increasing medical practice and the work required for the publication of his botanical treatise, Withering found time to devote to mineralogy and chemistry. He alternated these with his botanical pursuits, depending on the season. As he expressed it at the beginning of winter, "Botany now no longer presides at my board—her season is past, and chymistry overspreads the table."

Withering's study of the natural and medicinal properties of mineral waters of Great Britain was practically the first really scientific examination and analysis made. His mineralogical researches were important and his discovery of native barium carbonate, named in 1790 by Werner "witherite," has given him a definite place among mineralogists. This mineral, which occurs in large masses and in crystalline form near Hexham, Northumberland, is a white to grayish or yellowish material extensively used in sugar refining, plate glass making, and paint manufacture.—Louis H. Roddis, M.D. William Withering: The Introduction of Digitalis into Medical Practice. New York, Paul B. Hoeber, Inc., 1936, p. 37.
Mitral Stenosis

Mitral stenosis, though noted in 1669 by John Mayou (1640-79), was more fully described pathologically in 1715 by Raymond de Vieussens (1641-1716), Professor of Medicine at Montpellier, who also noticed the characters of the pulse; Giambattista (1682-1771) also described it. Its clinical recognition naturally waited on the discovery of auscultation, though in 1806 Corvisart (1755-1821) insisted on the diagnostic value of the thrill. The presystolic murmur was apparently heard by Bertin in 1824, but it was not until 1843 that its importance was fully recognized by Fauvel, who must be given due credit for this correlation.—Sir Humphry Davy Rolleston. The Harveian Oration. Great Britain, Cambridge University Press, 1928, p. 41.