Leopold Auenbrugger. His “Inventum Novum”—1761

In 1761, exactly 200 years ago, Leopold Auenbrugger’s "Inventum Novum ex Percussione Thoracis Humani, ut Signo, Abstrusos Interni Pectoris Morbos Detegendi," "for detecting, by means of percussion, the obscure diseases of the chest" was first published in Vienna. It may not be without significance that his father was an innkeeper, who continually estimated the contents of casks of wine in the cellar by sounding them, and that the author himself was a musician with aural sensitivity that readily discriminated between slight changes in pitch. Auenbrugger, indeed, in his masterpiece states, "casks as long as they are empty are resonant everywhere, but when filled lose this resonance in proportion as the volume of air they contain is diminished."

The presence of fluid in the chest and in the abdomen had from time to time been recognized by succussion throughout the ages beginning with the Greeks. Percussion of the abdomen was practiced by Hippocrates for the drum-like note in tympanites—hence the name—was mentioned by him and his successors. The Hippocratic physicians in the fifth century B.C. observed a distinct splash when they shook certain patients with pleurisy, a method named succussion. The epochal contribution of Auenbrugger in "Percussion of the Chest" was, however, the first concrete description of the technic of immediate percussion on physical examination.1-3

Auenbrugger was born at Gratz in Styria, Lower Austria, November 19, 1722, and received his university education in Vienna, then the center of German literature and music. Auenbrugger’s interest in music was probably in part responsible for his discovery of percussion, and also led to compositions that included the libretto to Salieri’s comic
opera The Chimney Sweep. Sigerist observed, "It would seem that he (Auenbrugger) did not shine in this domain as much as he did in the field of medicine, since otherwise he would have scarcely taken the trouble to provide a text for what Mozart (writing to his father) described as 'a pitiable work.'" But his musical inclination is reflected in the first proposition of his book that states "the chest of a healthy subject sounds, when struck, like a cloth-covered drum." He evidently had a charming personality, was widely cultivated, became an intimate friend of the Empress Maria Theresa, and was designated officially as a member of the nobility. In 1751, he was appointed physician-in-chief to the Hospital of the Holy Trinity at Vienna.

The publication of "Percussion of the Chest" when he was 39 years of age was a result of 7 years' experimentation and testing of the value of the method. Auenbrugger practiced percussion with the tips of all the fingers of one hand, over a thin shirt and with a soft leather glove on his hand. He ascertained the sounds produced over healthy lungs, over collections of fluid injected into cadavers, and over various pathologic lesions in patients. The significance of the various tones elicited during life was verified by post-mortem examinations. Auenbrugger, observes George Dock, had two distinct tasks bound together. First, to make known the acoustic phenomena elicited by percussion of the chest and their application to diagnosis. Second, to increase knowledge of the anatomic changes in thoracic disease and their relation to percussion findings. The methodical habits of Auenbrugger are well reflected in the fact that he apparently complied with a self-imposed New Year's resolution to complete all his previous year's work by writing his "Preface" on New Year's Eve, December 31, 1760, so that his masterpiece could be published in 1761.

Of great though tangential interest is the remarkable review of "Inventum Novum" by Oliver Goldsmith, published in an English periodical August 27, 1761. This odd fragment was brought to light by the clever literary detective work of Dr. Ronald S. Crane and made known to medical readers by Dr. Henry S. Viets, who states "When Auenbrugger first published his book on "Percussion," Oliver Goldsmith was doing hack work in London for John Newbery, a bookseller in St. Paul's Churchyard. Newbery had started, in 1761, a newspaper, the 'Public Ledger,' and Goldsmith contributed papers twice a week to it. Although Goldsmith was definitely settled on his career as an author-poet, he had not forgotten his medical education and his long trip abroad which ended in a degree of M.D. from either Louvain or Padua in 1756. It is, therefore, not surprising that he was at once interested and probably appreciated the importance of Auenbrugger's discovery." In his note to the editor of the "Public Ledger," published in 1761 and discovered and republished by Professor Ronald S. Crane, Oliver Goldsmith states: "They who trust to foreign literary journals for a character of foreign publications will probably be deceived; in them we find every book well written, and every author ingenious; we must consult the works themselves if we would form a judgment.

"As I flatter myself that I shall have many of those publications, almost as soon as the journalists in question, any judgment I am capable of forming will at least be unbiased by former authority.

"There has been just published at Vienna, a Latin treatise with the following title, 'a new invention for the discovery of latent disorders in the breast, by striking the thorax; by Leopold Auenbrugger, M.D. &c.'"

Oliver Goldsmith thereupon presents an admirably concise description of the book and then he concludes, "Such are the outlines of this new discovery: whether it may be of use to society or not, there is no necessity for me to pretend to determine, only this may be observed, that the lungs are often even in the most healthy state, found to adhere to the pleura, and in such a case, I fancy the sound would, in that part, deceive the practitioners; however, I shall not pretend to set my conjecture against his experience. Upon the whole,
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It is a trial that may be easily made, and to borrow an expression from Doctor Rock, 'If it cannot cure, it can do you no harm.'

The 'Inventum Novum' went through two editions but was largely ignored by the medical profession that included Auenbrugger's own teacher, the Baron van Swieten, a pupil of Boerhaave of Leyden.

It is interesting to speculate why it met with indifference or scorn. A simple method requiring no apparatus or tools but only the use of one's sensory organs, it was of great value in detecting pleurisy, empyema, and other collections of fluid. The explanation may well lie in the fact that in 1761 medicine had not progressed to the stage where the importance of accurate knowledge of structural changes in disease was recognized. Indeed, it was only in the same year that the foundation of pathologic anatomy, Morgagni's great masterpiece, De Sedibus et Causis Morborum per Anatomen Indagatis Libri Quinque appeared. These two books were expressions of an identical movement to establish an anatomic basis for disease and inaugurated a new era in the history of medicine. Morgagni laid the foundations of pathologic anatomy; Auenbrugger, the foundations of anatomic diagnosis. Perhaps, also, as suggested by Rolleston, the conservatism responsible for opposition to Harvey's discovery delayed the acceptance of Auenbrugger's percussion. The discovery was too long before its time.

Auenbrugger's discovery did not fall entirely on barren soil, however. One of the medical periodicals of the time spoke of the 'Inventum Novum' as a 'torch destined to illumine the darkness of thoracic disease.' Although his immediate successors at the University in Vienna ignored the discovery, one of Auenbrugger's pupils, Stoll, later succeeded to the professorship at Vienna and testified to the great value of the method in detecting pleurisy and empyema. He also suggested its value in guiding surgical intervention. Auenbrugger in later years was accorded great acclaim. He was acknowledged to be one of the medical leaders of his time and was universally beloved and respected in Vienna.

It was not until 1808, however, when Corvisart, physician to Napoleon I, and leader of the medical profession in France, published his own observations that the value of percussion was properly recognized. He did away with the shirt and gloves of Auenbrugger but generously accorded him all credit for the method. Corvisart declared in his Preface that he was well aware of the small glory that comes to translators and to those who simply comment on the work of others. In publishing his own translation of the 'Inventum Novum,' Corvisart stated, 'It is he and the beautiful invention which of right belongs to him that I wish to recall to life.' The technic of percussion was then accepted but was generally practiced only later when it was related to the findings of auscultation described by Laennec. With the first English translation of the 'Inventum Novum' by Sir John Forbes in 1824, percussion began to be widely practiced in Great Britain and the United States.

Auenbrugger lived long enough to witness the proper recognition of his work, and died at the age of 87 on May 17, 1809, 1 year after Corvisart's translation into French was published.

And so this year, as we percuss the chest to ascertain the cardiac silhouette or the nature of underlying pulmonary disease, we may take pleasure in the reminiscence of Auenbrugger and the appearance of his 'Inventum Novum' two centuries ago. Although 'his royal gift to mankind' of 95 pages was neglected for more than a half century, until 1 year before his death, we may reflect that 'Auenbrugger himself was too well poised and serene of nature to worry about his posthumous reputation. Grave, genial, inflexibly honest, unassuming and charitable, loving science for its own sake,' and wholly dedicated to the welfare of his patients, he was indeed the 'compleat physician.'

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References

Inventum Novum
The Author's Preface

I here present the reader with a new sign which I have discovered for detecting diseases of the chest. This consists in the percussion of the human thorax, whereby, according to the character of the particular sounds thence elicited, an opinion is formed of the internal state of that cavity. In making public my discoveries respecting this matter I have been actuated neither by an itch for writing, nor a fondness for speculation, but by the desire of submitting to my brethren the fruits of seven years' observation and reflexion. In doing so, I have not been unconscious of the dangers I must encounter; since it has always been the fate of those who have illustrated or improved the arts and sciences by their discoveries to be beset by envy, malice, hatred, detraction, and calumny. This, the common lot, I have chosen to undergo; but with the determination of refusing to every one who is actuated by such motives as these all explanation of my doctrines. What I have written I have proved again and again, by the testimony of my own senses, and amid laborious and tedious exertions; still guarding, on all occasions, against the seductive influence of self-love.

And here, lest any one should imagine that this new sign has been thoroughly investigated, even as far as regards the diseases noticed in my Treatise, I think it necessary candidly to confess that there still remain many defects to be remedied—and which I expect will be remedied—by careful observation and experience.—From On Percussion of the Chest: being a translation of Auenbrugger's original treatise, entitled, Inventum Novum ex Percussione Thoracis Humani, ut Signo, Abstrusos Interni Pectoris Morbos Detegendi. Published in 1761. Translated by John Forbes, M.D. In: Classics of Medicine and Surgery. New York, Dover Publications, Inc., 1959, p. 123.
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