

Myocardial infarction and angina pectoris in the history of Polish medicine

Part 1. Discovery and understanding of the disease

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Abstract: This review presents the most important achievements associated with the understanding of angina pectoris and myocardial infarction in Poland. The author describes the contribution of physicians living on Polish soil to scientific knowledge in this field. The beginning of Polish interest in the heart and cardiac diseases are associated with an eminent medieval physician, Thomas of Wrocław. In Part 1, a history of studies on myocardial infarction ends with establishing the first diagnoses of myocardial infarction as the cause of death in patients with angina in the mid-19th century. While discussing the contribution of Polish physicians to the worldwide knowledge about myocardial infarction, crucial facts associated with understanding of angina pectoris in other countries have been presented. The discovery of the pathomorphological features of ischemic heart disease and its relation to clinical signs or symptoms has been reminded to the readers. Eminent and well or less known Polish forefathers of medicine are recalled, including Adam Christian Thebesius, Józef Chrzonowicz, Jan Cenner, Andrzej Janikowski, Józef Rompalski, Józef Pawiński and Edward Korczyński.

Key words: angina pectoris, Heberden's disease, history of medicine, myocardial infarction, Thebesian valve

The story presented in the current review article concerns a disease, which has accompanied man since the earliest times. It, however, started to manifest itself only when human life became so long and safe that natural death due to the ageing process could "turn up" at all and "outdistance" other, once leading, causes of death, like common mutual killing, trauma and contagious diseases. It should be emphasized that quoting the earliest traditions about the disease, which "crashes the chest, makes breathless and kills", it is hard to separate the accounts of the ailment, which could now be defined as unstable angina, from the reports regarding myocardial infarction. From a historical perspective, the two issues cannot be discussed separately.

The earliest reports, whose content could be referred to the symptoms of angina pectoris and its consequences, can be found in ancient Egyptian papyruses dated approximately 3500 years back, scarce notes of the Near and Far East physicians, or notes left over by the Ancient Mediterranean med-

icine. There is no certainty whether the authors commented on the symptoms of angina pectoris or myocardial infarction.

In the scholastic Middle Ages, and even in the Renaissance, despite the full bloom of arts and sciences, no records showing the knowledge about symptoms of ischemic heart disease or even a concept for treatment have been found. It was as late as the 16th and 17th centuries, when a breakthrough, or its substitute, was made in the process of understanding of this lethal disease.

Along with quite the questionable progress of medicine in the Middle Ages, the medical science on Polish soil was slowly developing. Alike the whole contemporary European medicine, although with rare exceptions, there was even no attempt to search for the cause of death in patients with heart problems. It was, however, on Polish soil, where an interesting text concerning heart diseases was penned. The text, being a part of *Practica Medicinalis*, a work quite well-known across medieval Europe and originated from Poland, is worth mentioning as a certain exception in medieval medicine. The author was bishop Thomas of Wrocław (1297–1378). Bishop Thomas studied medical sciences at the most famous universities and traveled to a number of cities. Later, as a recognized scholar, he was invited to Paris, Montpellier and Oxford to give lectures [1]. The achievements of bishop Thomas are linked with the history of cardiology by the section of the work mentioned above and entitled "De syncopi et debilitate cordis", a text about "disabilities" (*debilitas* may be translated as "weakness", "debility", "deficiency", "disability" or in a free

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HISTORY OF INTERNAL MEDICINE IN POLAND

translation as “disease”) of the heart, palpitation and syncope associated with it. It was the first study on Polish soil referring to the heart, and probably the first in the world, perceiving a relation between loss of consciousness and arrhythmia. However, was the author indeed describing unstable angina or myocardial infarction? We are not certain, what lies behind some sentences, like “(...) a malicious attribute of cold appears, terrible for the heart (...). Weakness of the heart appeals for that and its motion becomes pain. Thus its incapacity develops soon. And when fainting is really prolonged and motion and sensation of the body is lost, death is what comes most frequent...”. It greatly depends on the imagination of a today’s reader and also on a manner of translation of deeply scholastic and complicated texts, full of philosophical embellishments. The above quoted passage, freely translated and interpreted, could well be regarded as an account of ischemic heart disease and myocardial infarction... [2].

Chest pain was still associated with a secret and ominous disease of unknown origins. No one could tell the exact localization of the pain, whether it was coming directly from the respiratory tract, lungs, heart, vessels, esophagus or cardia. A patient, with his reports, also could not provide a confused and often opinionated physician with reliable clues, due to the fact that there was common lack of understanding for the essence of those ailments. After all, *cardia* was a Latin word related first of all to a part of the stomach. in dictionaries published in the 18th and 19th centuries, we can find *cardiacus*, meaning cordial, or a remedy for heart and stomach issues, and pains in the area are referred to as *cardialgia* [3].

For some of my colleagues reading this paragraph, the information given below, saying that it was on Polish soil where perhaps for the first time in the history of medicine atherosclerotic lesions of coronary vessels were observed (and they might have been the direct cause of death of a patient whose autopsy was performed), would be barely reliable. The first physician to observe it was Adam Christian Thebesius who described, as the first one, or certainly one of the first physicians, “ossification” of coronary arteries. It was the definition he employed to describe coronary arteriosclerosis [4].

Thebesius was born in Lower Silesia. He studied in Leipzig, Halle and Leiden. at the age of 22, he took his doctorate in Leiden, with an innovative dissertation on coronary circulation. After intentional resignation from university posts and offices, he settled in Hirschberg (currently Jelenia Góra in Poland). Six years later, in 1714, he was appointed an honorable office of “town medical officer”, a duty he carried out for 20 years [1,5,6].

Thebesius was one of the most eminent researchers working on anatomy of the heart and particularly the pioneer of research on coronary circulation, the expert in anatomy of the coronary vessels and the first physician to describe their anomalies. Definitions, like “Thebesian veins” and “Thebesian valve”, are well-known in anatomical nomenclature of the heart and recognized in the whole contemporary medical world.

The knowledge of anatomy of the coronary vessels, and even accidentally found pathological lesions, naturally inspired to the search for causal relations between the observed lesions and clinical symptoms manifested *in vivo*, chest pain in particular. Meanwhile, in the 18th century, the level of knowledge of the coronary vessels anatomy was already quite high. The time came at last for a real “discovery” of the ischemic heart disease and myocardial infarction. The discovery of a “new and so far unknown disease” by two physicians, who independently announced their observations in 1768, was crystallizing. These were a French physician Nicolas Rougnon de Magny (1727–1799) and an English physician William Heberden (1710–1801). The discovery, despite the fact that it had been preceded by some harbingers mentioned above, was of the immense significance. Although Rougnon used a strong definition of “so far unknown disease” for coronary heart disease in his report, it was Heberden, who was associated with “the discovery”, and for a long time, even in the 19th century, the disease was called “Heberden’s disease” [7].

In the memorable year of 1768, on July 21, Heberden gave a lecture at the session of the Royal College of Physicians in London. The text, entitled *Some accounts of a disorder of the breast*, was published 4 years later in *Medical Transactions* (approx. 100 years ago, Józef Pawiński received a full text of the Heberden’s lecture from the British Museum in London, in response to his entreaties) [8,9]. Except for quite the accurate presentation of the course of the disease and the nature of the ailment, the study reports helplessness of a physician concerning the possibilities of treatment with pessimism and resignation. Within a few years, the new disease entity was approved in the medical world, although not all physicians accepted it unquestioningly. Contemporary ideas of, generally speaking, “chest breathlessness”, understood quite differently, often based on superstitions or fancy diagnoses, provoking a smile of forgiving irony nowadays, were still rooted too deeply.

Describing Polish early days of establishing a diagnosis and treatment of the ischemic heart disease and myocardial infarction, a role of Józef Pawiński (1851–1925) (Fig.), an outstanding Warsaw physician, should be mentioned. He was undoubtedly “the father of Polish cardiology”, its creator on Polish soil, as well as a specialist in the history of medicine with a flair for the arts; furthermore, he deserves a title of a medical philosopher. As an expert in pathology and therapy of heart diseases, he was also acknowledged abroad [1].

In 1908, Pawiński wrote in the *Memoir of the Warsaw Medical Association*: “Not only in the history of mankind, but also in the history of medicine, we encounter issues, which require looking whole centuries back to understand them thoroughly. Here I mean gradual development of symptomatology and pathogenesis of angina pectoris before Heberden, who in 1768 for the first time provided the precise description of this ailment as a pathological entity and named it angina pectoris” [8].

Pawiński was haunted by the term of „angina”. We know that its origin is Greek. Following Stembrowicz’s disquisi-

tion, I would like to explain that its meaning is “to strangle, to press, to constrict”. It corresponds to Greek *kynarche*, used by Hippocrates to define neck diseases provoking problems with breathing and swallowing disorders. The Romans meant “angina” as diseases associated with swallowing and breathing problems, but not with diseases of the digestive tract and lungs. Therefore, Heberden borrowed a name attributed to the diseases of throat, larynx and trachea, and manifested by pain along with choking and suffocation, for quite another ailment, specifying the name by adding the ailment location (“pectoris”). Different names were used in the past, most of which has only historical meaning, those were as follows: *asthma convulsivum*, *asthma cardiacum*, *syncope anginosa*, *asthma spastica arthriticum inconstans*, *asthma dolorificum*, *stenocardia*, *sternalgia*. *Dusznica bolesna* was for a long time a dominating term in Poland, as a literal translation of *asthma dolorificum*. At the beginning of the 20th century, Pawiński proposed the name of *stenokardia*, simple, concise and conveying symptoms of the disease in a single word. Mściwój Semerau-Siemianowski proposed a term of *dławica piersiowa* (angina pectoris), frequently used today, but supplanted by *choroba wieńcowa* (coronary heart disease), or even more modern *choroba niedokrwienienna serca* (ischemic heart disease) [1,7,8].

On Polish soil, harbingers of diagnosing angina pectoris appeared relatively early, but certainly not right away. In this spirit, in 1812, a young Vilnius physician Józef Chrzączonowicz (1790–1823) wrote his doctoral dissertation entitled “*Dissertatio inauguralis medica de angore pectoris*” (Latin term *angor* means “suffocation”, “choking” and also “anxiety”, “terror”). In his work, Chrzączonowicz, a follower of Józef Frank (1771–1842), excellent and extremely well educated clinician, provides the account not only of the disease symptoms, but also the results of autopsies of people who died of angina [10]. Chrzączonowicz was a very young physician, when he submitted his doctoral dissertation, he was only 22, and only two years earlier he received his medical degree [11].

Citing Heberden and Forthergill, he reports that during the autopsy the “ossification” of the heart, coronary arteries, aorta and semilunar valves is found, whereas he probably neither performed the autopsies himself nor participated in them. Contrary to a common belief, he claims that the disease is quite common, affects mainly elderly males, is less common in females and afflicts rather those in postmenstrual age. Chrzączonowicz carried out differential diagnosis of four ailments, which, in his opinion, were hard to distinguish. They were angina pectoris, periodic asthma (note: bronchial asthma), incubus (*sic*) and syncope. Among a variety of clinical observations concerning pain reported by patients, the accounts like “pain in the lower part of the chest, stretching to back, ears and sometimes through arms to hands” are the most accurate [10].

Eight years later, a similarly entituled doctoral dissertation was presented by a young physician from Kraków, Jan Cenner. The public doctoral defense was performed at the Jagiellonian University on July 14, 1820 [12,13]. Cenner lacked

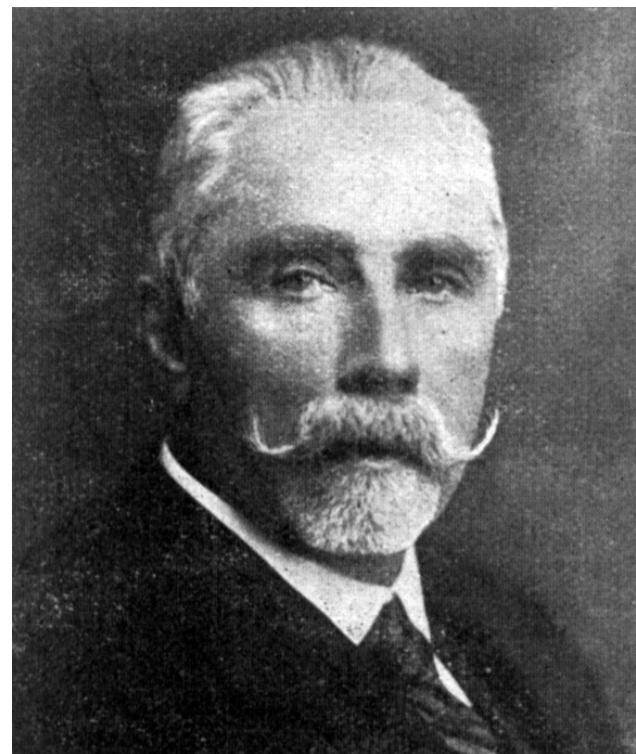


Fig. Józef Pawiński (1851–1925). Reproduced from collection of Janusz H. Skalski

strong support of an experienced thesis supervisor, he was then in less comfortable situation than his older colleague from Vilnius. Certainly, the supervisor of the latter, i.e. Józef Frank, could more effectively support his doctoral student with work concept and professionalism. The university of Krakow was falling slightly behind the Vilnius one, and Cenner's supervisors were incomparably less experienced in establishing a diagnosis and treating of heart diseases [14,15].

In both Cenner's and Chrzączonowicz's dissertations, most of the inventive content was taken from the quoted references. Even if it is true, Cenner's dissertation seems almost an encyclopedic summary of the medical knowledge about angina pectoris at the beginning of the 19th century.

Cenner reports it as hard facts that autopsy in angina patients reveals “ossification” of the coronary arteries, walls of large arteries and also the cardiac valves. However, reading the text, we have the impression that the “ossification” of vessels is rather considered a tidbit, not the essence of the disease. Some of the proposed medications seem bizarre and inexplicable today, others have a deeper sense, due to the fact that by a cascade of triggered physiological effects, they could be somehow beneficial to the patient. Use of digitalis and opium is worth noticing. Furthermore, the work described a variety of medications, which application seems appropriate nowadays and even shows a splendid intuition of physicians at those times. The medications included Indian snakeroot (*rauvolfia serpentina* – antiarrhythmic, hypotensive and relax-

HISTORY OF INTERNAL MEDICINE IN POLAND

ing effect), angelica (spasmolytic and diuretic effect, currently we know that it contains a calcium channel blocker), magnesium salts (antiarrhythmic), potassium carbonate (potassium ion donor), Peruvian bark (its alkaloids, i.e. quinine and quinidine, have antiarrhythmic effect), scopolia carniolica (relaxant effect, e.g. in bronchial asthma), calcium carbonate (calcium ion donor). Contrary to the medications named above, many described drugs were bizarre and their use may be recognized today as improper and irrational. They include life-threatening poisons such as copper and gold salts, calomel, cinnabar, water hemlock, Cherry Laurel Water (one of its components decomposes to hydrogen cyanide!); some irritant agents for external use are also irrational. Others include long forgotten sedative medications, relaxants, painkillers (musk, castor, asafoetida gum resin, common lettuce, petioles of climbing nightshade [*Solanum dulcamara*], etc.) and dehydrates. Apart from numerous hygienic and diet recommendations, attention is paid to the care of the fluid balance ("large amounts of liquids, tea and coffee are contraindicated") and the recommendation to avoid alcohol and other substances [13].

The issue of angina pectoris reappears in Polish medical literature only after another 24 years, thus the topic was not among particularly popular ones. It was a quite intriguing case report by Andrzej Janikowski, the president of the Warsaw Medical Association, concerning intravital diagnosis of angina pectoris in a patient, whose autopsy then proved it. Janikowski's work entitled "Ossification of coronary arteries of the heart", though short, should be recorded as the first Polish study based on modern scientific pragmatism and at the same time completed in accordance with the rules of clinical pathology, with the diagnosis proved posthumously [16].

In 1850, *Tygodnik Lekarski* ran an article by Józef Rompalski concerning angina pectoris (*Heberden's asthma, angina pectoris, stenocardia, etc.*). The author presented the account of the patient death accompanied by unambiguous symptoms, which could only have been resulted from myocardial infarction. Therefore, we can record the article by Rompalski as the first Polish report of myocardial infarction despite the fact that the autopsy was not performed [11]. The paper was entirely based on a casuistic observation concerning a disease of a 69-year-old man who suffered from spasmodic pain and chest constriction "behind the breastbone", severe burning pain radiating through the left part of the neck to the left arm and the elbow; the patient was breathless and had difficulty with breathing. The second attack, which occurred two months later, lasted 15 minutes and was stronger than the first one. The third one of the half an hour duration, preceded subsequent attacks occurring quickly one after another, which the patient did not survive.

Based on the case report, Rompalski presents his knowledge about causes of the disease. "The disease in question is typical of the second half of human life and it is seldom encountered before one reaches his forties or fifties (...) amidst the most beautifully flourished health it frightens its victims. Its lasting is quite changeable and its end nearly always mis-

erable (...). More or less complete ossification of coronary arteries of the heart, further damage to the aorta, thickening, ulceration and petrified parts of this huge artery were almost always found" [11,14].

In the second part of this paper, we will give the account of intravital diagnosis of myocardial infarction that was the first in Poland (and the second in the world). This case, made by Korczyński in 1887 was reliably documented and subsequently proved by the autopsy.

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