One of the most prevalent neurological disorders is Parkinson's disease (PD), characterized by four cardinal signs: tremor, bradykinesia, rigor and postural instability. Although individual signs of Parkinson's disease — most frequently tremor — have been described since ancient times, the first systematic description of the disease is attributed to James Parkinson in 1817. Here we present evidence that not only individual signs, but the disease itself with all four cardinal signs were described in 1690 by Ferenc Pápai Páriz, in a Hungarian medical text over 120 years before the classical description of James Parkinson. In this article I draw the reader's attention to the descriptive chapter in Pápai's book that was published in Hungarian, which because it is understood by so few people, has resulted in this description of PD being ignored in the medical literature.

One of the most prevalent neurological disorders is Parkinson's disease. It is generally accepted that the four major signs of the disease are tremor, bradykinesia, rigor and postural instability; the disease is progressive, affects mostly the elderly, is caused by a degenerative process in the central nervous system, and it was James Parkinson who gave the first description of the disease in 1817 [1].

Although with the description of six cases and the discussion of differential diagnostic aspects, there is no doubt that James Parkinson gave the first detailed description of the disease named later after him [2], some clinical signs of Parkinson's disease were described as far as 1000 B.C. or before [3], some differential diagnostic aspects of tremor had already been discussed in the second century by Galen [4], and the tremor was also described by Leonardo da Vinci [5] and later by several physicians from Western Europe including Pratensis and Forestus from the middle of the 16th century [6] and Johan Baptiste Sagar from the 18th century in Austria [7]. However, no references in the literature can be found regarding reports on signs of PD from Central-Eastern Europe.

With this report I would like to demonstrate that the characteristics of PD were described well over a century before James Parkinson in a monograph written in Hungarian by Ferenc Pápai Páriz (Fig. 1A). The description of the four cardinal signs of PD appears in the first Hungarian language medical manual (Fig. 1B) [8].

1. About the author

Ferenc Pápai Páriz was born in Dés, Hungary, May 10, 1649. From 1667 he studied at the Bethlen College in the city of Nagyenyed, and in 1672 he left Transylvania to attend universities throughout Europe. He began his medical studies in Leipzig in 1672, and subsequently spent two further years in Basel, where he obtained his medical degree and was nominated “Assessor of the chair of medicine in Basel” on the 20th of October 1674, which gave him a faculty position in the Basel Faculty of Medicine. He returned home the next year and obtained a faculty position in the College in Nagyenyed in 1678, taught philosophy, Greek and natural sciences and was also a practicing physician [9,10]. He finished his book Pax corporis (The peace of the body) in 1687, which was published three years later [8].

2. About Pax corporis

Pax corporis was published first in 1690, followed by eight further editions between 1692 and 1774. The book was written for the lay public, therefore was written in Hungarian rather than Latin; no individual case descriptions were presented. The book has never been translated but an annotated reprint of the 1764 edition was published in 1984 [11]. Pax corporis consists of eight books, each divided into chapters. The title of the first book is
"On the diseases of the head", with eight chapters on neurological and psychiatric signs and symptoms. The first chapter is on headache, the second is on dizziness and the title of the third “On tremulousness and paresis of the hand, leg, tongue and other parts” (Fig. 2A) suggests that this chapter refers to a movement disorder. Pápai makes a definite distinction between the movement disorder described in the third chapter and stroke, emphasizing this distinction by devoting a separate chapter for stroke (fifth chapter of the first book). It should also be noted that Pápai mentions tremor of the tongue among the signs of the disease.

3. The description of the major signs of Parkinson's disease in Pápai's book

In the first sentence of the third chapter he wrote that “The tremulousness may occur either in one part i.e. in the hand or the head, or in several parts at the same time.” (Fig. 2A). Further on, rigor is described as “And when the spirits from a body part either decrease or become immobile due to plugging of the tendons, then not only tremor appears, but the body part frequently becomes weak in a way that it is difficult for one to move it either up or downward” (Fig. 2B). With such a description of increased tone in agonist as well as antagonist muscles, it appears that Pápai refers to rigidity and not spasticity. In the differential diagnosis Pápai mentions that “A palsy of an extremity usually occurs in one of two ways: 1. When the body part does not move but feels or 2. When neither moves, nor feels.” (Fig. 2C). Thus, movement disorder (bradykinesia) without sensory loss is differentiated from a paresis caused by a stroke when sensory loss is frequently (although not always) associated with paresis. Pápai however gives no further discussion on the lack of sensory deficits in this disorder. The fourth cardinal sign, instability is also referred to in the description of Pápai, by mentioning swaying of the body in those who are able to walk, although this description rather suggests than precisely describes instability: “Whichever body part is affected, if he can walk, let him walk as he can and sway his body; if he can not walk have others carry his body and rub hard with warm clothes, as all these decrease the phlegm” (Fig. 2D).

Pápai also recognized and described other characteristics of Parkinson's disease. He realized and described that the disease is a progressive one, mainly affecting the elderly: “If the tremor occurs at an older age, it mostly stays until death and may precede stroke or at least the paresis of the body part.” (Fig. 2E). Pápai also suggested that the cause of the disease is in the brain: “This disease belongs to the diseases of the head, originating from fluids leaking from the head that flood and weaken the tendons or nerves coming down from the brain.” (Fig. 2F). This sentence also reflects what Pápai Páriz thinks about the central nervous system control of movements via fluids. By expressis verbis stating that this movement disorder is a disease of the head, he made a better guess than Parkinson himself, who assumed the lesion responsible for the disease is in the spinal cord: “the proximate cause of the disease is in the superior part of the medulla spinalis; and …… the morbid state does not extend to the encephalon” [2].

Individual signs of Parkinson's disease have been described since ancient times. From all the above, it may be assumed that Pápai recognized and described or referred not only to tremor but all four cardinal clinical signs (tremor, rigor, bradykinesia and postural instability) of this movement disorder. In addition, he described the progressive nature of the disease and mentioned the typical age at onset. He also assumed that the signs are due to some disorder of the central nervous system, stating that the
disease emanates from the “substance of the brain”. Finally, he gave a definite distinction of this disorder from stroke by devoting separate chapters to these disorders in his book. This eight page chapter on tremulousness in Pápai’s 400-page medical manual is certainly not as detailed and focused as James Parkinson’s monograph; however, the major characteristics of the disease had definitely been registered within one document 130 years before Parkinson’s more detailed description. For his monograph James Parkinson certainly deserves having his name associated to this syndrome, but for the sake of historical accuracy Pápai (Fig. 1A) should also be acknowledged in the future — even by changing the name of Parkinson’s disease (PD) to Pápai-Parkinson’s disease (PPD).

Acknowledgement

The author is grateful for the Library of the Reformed College of Debrecen, for the permission of publishing parts of the work of Pápai as illustrations for the manuscript. This work was partly supported from Grant No. ETT 178/2006 of the Ministry of Health, Republic of Hungary.

References


[8] Pápai Páriz F. Pax corporis, az az az emberi testnek belső nyavalyának okairól, fészkeről ’s azoknak orvosulásának módgyáról való tracta … (“Pax corporis, i.e. a teaching of the causes, sources and the methods of treatment of the internal diseases of the human body”). Némethi Mihály, Kolozsvár, 1690. Hungarian.


[10] Szállási Á. 300 éves a Pax corporis. [Pax corporis is 300 years old]. Orv Hetil 1990;131:2661–3 [in Hungarian].
