History of Medicine. 2016. Vol. 3. № 1.
DOI: 10.17720/2409-5834.v3.1.2016.11w

Endocrinology in Art. A review

A rewiew prepared:

Boleslav L. Lichterman, Nataliya P. Shok

I.M. Sechenov First Moscow State Medical University, The Ministry of Health of the Russian Federation
8 Trubetskaya St., building 2, Moscow 119991, Russia

I.I. Dedov, G.A. Melnichenko, A.S. Popov. Endocrinology in art. Thyroid disease: A history with geography in pictures and charts. Vol. 1. Moscow: ROOI People's Health, 2015. 64 p.

I.I. Dedov, G.A. Melnichenko, A.S. Popov. Excess and deficiency of hormonesThe hypothalamic-pituitary and reproductive systems: jesters, pharaohs and midgets. Vol. 2. M.: ROOI People's Health, 2015. 72 p.

I.I. Dedov, G.A. Melnichenko, A.S. Popov. Endocrinology in art. Diabetes, obesity and metabolic syndrome. Vol. 3. M.: ROOI People's Health, 2015. 40 p.

For quotation: *Lichterman B.L. , Shok N.P. Endocrinology in Art. A review. History of Medicine. 2016. Vol. 3. № 1. P. 96–99.*

About the authors

Boleslav L. Lichterman – Doctor of Medical Sciences, Professor at the Department of the History of Medicine, National History and Culturology, I.M. Sechenov First Moscow Medical University (Moscow). E-mail: lichterman@hotmail.com

Nataliya P. Shok – Doctor of Historical Sciences, Professor at the Department of the History of Medicine, National History and Culturology, I.M. Sechenov First Moscow Medical University (Moscow). E-mail: shok@nmt.msk.ru

The topic "Medicine and Fine Arts" is a rich one. Unfortunately, there are few Russian-language publications dealing with it. One example is the brochure Neurosurgical Themes in Art, published in 1991 for the delegates of the Ninth European Congress of Neurosurgeons held at the N.N. Burdenko Institute of Neurosurgery in Moscow. In 2009, two beautifully illustrated picture books were published almost simultaneously: *Medicine in Art From Antiquity to the Present Day* by Jordi Vigué and Melissa Ricketts (translated from Spanish by E.E. Berger, MEDpress-Inform, 2009, Moscow), and two volumes of *Medicine and Art* by A. Emery and M. Emery (preface to the translation from English, commentary and scientific editing T.S. Sorokina, Center for Development of Cross-Sectoral Programs, 2009, Moscow). In 2011, the monograph The Remarkables: *Endocrine Abnormalities in* Art (C.Z. Clark and O. Clark), which was devoted to the endocrine abnormalities in the visual arts, was released in English. The publications continued with *Endocrinology in Art* (authors: Russian Academy of Science academics I.I. Dedov and G.A. Melnichenko).

Endocrinology in Art is an unusual publication. It consists of three books, each of which is accompanied by a compact disc with video lectures (lecturer: Russian Academy of Science academic, Professor G.A. Melnichenko): Thyroid Disease: History and Geography in Pictures and Diagrams (vol. 1, lecture 1), Excess and Shortage of Hormones of the Hypothalamic-Pituitary and Reproductive Systems: Clowns, Pharaohs and Dwarfs (vol. 2, lecture 2), Diabetes, Obesity and Metabolic Syndrome (vol. 3, lecture 3). As such, this was an unusual project consisting of a set of audio-visual aids to better understand and recall the material presented. It has a very wide audience – from the interested reader with no special training (the project's authors placed an accent on a popular scientific tone for the books

included in the publication) to the professional (the video lectures cycle is addressed to future doctors). According to the authors, a similar series of lectures (portrayal of various diseases in the arts) takes place at a number of universities around the world. *Endocrinology in Art* discusses the ability to see (i.e. recognize) images of pathology, as well as the ability (at a modern level) to treat it (note that the publication's material is divided into two sections – "the ability to see", which mainly focuses on reproductions of famous works of art, and the "ability to heal", which presents tables, charts and graphs, bearing contemporary professional information – treatment schemes and statistical data). The authors have this to say in the preface to the publication: "Attention is paid not only to presenting the best-known examples of medical problems reflected in paintings and sculptures of examples of diseases of the endocrine system, but also to talking about how the people once seen by the artists would be examined and treated today" (vol. 1, p. 8–9).

Thus, the authors skillfully used an interdisciplinary approach that is now necessary in teaching practice. Using this publication as an example, we find that art, traditionally carrying out the function of aesthetic education, is now actively integrated into the educational process as examples of "clinical cases". Note that the authors have focused on the origins and development of ideas about the diseases presented.

The first lecture states that artists unwittingly recorded particular anatomical features of their contemporaries. The earliest icons testify that at the time, enlarged thyroid glands were so widespread that they were seen as absolutely normal. The authors draw the audience's attention to the fact that thyroid disease often has symptoms, but they are not always visible and are not always perceived as a pathology. However, doctors contemplating a work of art cannot abstract themselves from their professional abilities and specialized knowledge. The project's authors offer us the chance to look at famous paintings through the eyes of an endocrinologist: "In the past, doctors were powerless in the face of these pathologies. Doctors of the 21st century are able to prevent and treat these diseases" (vol. 1, p. 60).

British professor of neuroesthetics Semir Zeki along with his colleagues conducted a study in which respondents ranked paintings from the most beautiful to the ugliest on a 10-point scale. According to the survey, in which 360 people participated, the most beautiful painting was the Great Odalisque by Jean Auguste Dominique Ingres, and the ugliest was Benefits Supervisor Sleeping (Sue Tilley) by Lucian Freud. The results of Zeki's study is a confirmation of the first video lecture's thesis: manifestations of certain endocrine diseases recorded in the works of art are perceived (and often continue to be perceived) by the audience and artists themselves as a variant of the norm, or even as a "special type" of beauty.

It is these, sometimes "non-obvious" illnesses – diseases of the thyroid gland – that are closely focused upon in the examples of historical paintings in the publication's first volume. At the beginning of the book the authors set out their approach to the analysis of paintings and sculptures – "Works of literature and paintings record typical images of contemporaries, and through them, in fact, one can imagine the prevalence of certain diseases in different historical periods in different geographical areas" (p. 15).

The art of the Renaissance and classicism is replete with all sorts of images of goiters: as the authors argue, in this period, "diseases of the thyroid gland dominate among the images of people with endocrinopathies" (p. 17).

Jean Auguste Dominique Ingres' painting *Roger Liberating Angelica* is a good example in the book of an artist singing the praises of goiter as a sign of feminine beauty and characteristic of "fertility" (vol. 1, p. 27). Angelica is depicted with her head thrown back, and her neck has a very large goiter clearly visible. It is known that the artist's model later died of suffocation caused by an enlarged thyroid gland. "How these young women with a round neck and peach blush on the cheeks excite me," Ingres wrote. Commenting on the phrase, the book draws the reader's attention to the fact "that the artist precisely notices the surprising feature of young patients' skin with hypothyroidism: carotene metabolism violation and difficulty in the formation of vitamin A leads to the accumulation of carotene in the skin – carotenemia. Here the artists' eye for detail is more accurate than textbook' definitions – instead of the textbook medical term "jaundice color" we have the poetic "peach blush" (p. 27).

The authors also make a distinction between images of euthyroid and diffuse toxic goiters. If the first example was widely portrayed, with cases in men, women and children, and was seen as something completely normal (goiters in women were even considered a sign of beauty and "fertility"), the latter, apparently, was less common, and images of them, as a rule, possessed a grotesque character: for example, masks and puppets of the Italian commedia dell'arte theater (p. 17), illustrations for J.L. Albert's 18th-century books (p. 32), and the painting *Grotesque by Giuseppe de Ribera* (p. 33). The authors state: "The illustrations portraying people with gross hypothyroidism and huge goiters were, from the point of view of the Renaissance, an example of 'the negative influence of the dark forces of nature and the Almighty's anger'" (p. 33).

The first section deals with diseases of the thyroid gland, while the second deals with pathological conditions associated with an excess or shortage of hypothalamic-pituitary hormones, as well as reproductive system lesions. The third section concerns how art reflects the scourges of modern society, such as diabetes, obesity or metabolic syndrome. In addition to the reproductions, the project's authors use tables and graphs, in which they clearly present extensive data on endocrinology to their audience.

Endocrinology in Art features excellent design and high-quality printing. The three hardcover sections with compact discs are enclosed in a combined case, which includes a reproduction of Las Meninas by Diego Velazquez and the White Angel fragment of the medieval fresco Myrrhbearers on Christ's Grave. The angel has a rounded neck and wide eyes (exophthalmos). In the first part of the publication, which is dedicated to diseases of the thyroid gland, this effeminate angel is presented as an illustration of severe iodine deficiency in Byzantium. According to the authors, the goiter "was described by physicians of Byzantium and Greece 1,000 years before it was mentioned in Western medical literature" (vol. 1, p. 19). Paintings allow the prevalence of goiter in different historical epochs to be estimated. For example, when analyzing 3,615 portraits of local residents in Bern (Switzerland), dated from the 17th–18th centuries, there are 553 cases where the neck is visible. Of these, 24 percent of men and 41 percent of women were identified as having goiters. Illustrations of myxedema were identified in Dwarf by Velazquez (1644) and Sitting Dwarf from the Goya school (19th century) (p. 37). Portrait of Helena Fourment by Peter Paul Rubens comes up twice – once as an illustration of Graves' disease (p. 53) and once for obesity (vol. 3, p. 15).

In the second part of the publication, acromegaly, hyperprolactinemia and dwarfism are discussed. In particular, the endocrinologist doctor provides an interpretation David's victory over Goliath: "Goliath probably suffered from acromegaly and hyperparathyroidism caused bone fragility" (vol. 2, p. 16). According to the authors, dwarfism was the second most "frequent of pathological manifestations associated with endocrinopathies occurring in paintings (after disorders of the thyroid gland)." Sometimes comments on a picture resemble an extract from the modern history of a disease. An example is the portrait of 52-year-old Magdalena Ventura with her husband and baby by Jusepe de Ribera (1631) – at 37, Ventura began to grow chest hair and a beard. The authors believe that Ventura had a virilizing tumor of the ovary. In modern conditions the examination method for patients with a similar diagnosis comprises determining the level of testosterone and DHEA-S levels in the blood, a pelvic ultrasound and an MRI of the adrenal glands (p. 55).

The third section deals with diabetes, obesity and metabolic syndrome. In this unit there are reproductions of paintings by Russian artists – *Portrait of the Fabulist Krylov* by Karl Briullov (1839) and two paintings by Boris Kustodiev, which illustrate obesity. Beauty by Kustodiev (1915) was used on the cover. Normally this picture is interpreted as an image of fertility and the embodiment of "the eternal feminine". From a professional point of view, the authors of *Endocrinology in Art* point out that this woman 'cannot be simply obese without metabolic disorders and metabolic syndrome – a violation of carbohydrate, lipid, purine metabolism, accompanied by hypertension and a decrease in insulin sensitivity. As a rule, the inevitable consequence of this is ischemic heart disease and diabetes. Abdominal obesity (fat accumulation in the abdominal area) is a direct indication of possible problems in the reproductive sphere" (p. 11). The statuette of the so-called Venus of

Willendorf (26th-24th centuries BC) is treated as "the earliest known illustration of obesity" (vol. 3, p. 9).

Undoubtedly, with the help of such aids, students are imbued with the spirit of their chosen specialization and see how to organize their life. We believe that there is an appropriate parallel with K. Rokitansky's statement about the value of postmortem meetings (in the book *A Guide to the Pathological Anatomy*), in which he notes that the preservation of rare, remarkable cases provides the opportunity, "upon further investigation ... to give occasion to new discoveries and views" if initially something was not fully described. Thus, the active use of the principle of illustration in the educational process, with paintings depicting a variety of human ailments (exhibits from postmortem meetings, museums and medical histories), allows us to better understand the current developmental state of a clinical specialization. Its study must always be associated with the investigation of the circumstances of its origin and development. An understanding of the developmental continuity of theory and practice in medicine, taking into account the role of socio-cultural factors in the development of scientific knowledge, is an important element in the socialization of medical students in the profession. It provides a source of better understanding of modern medicine, and contributes to the formation of clinical thinking.

It is hoped that the authors' example will inspire their colleagues, and soon we shall see surgery, neurology, psychiatry, ophthalmology, urology, gynecology and more "reflected in the mirror of art".

About the authors

Boleslav Leonidovich Lichterman – Doctor of Medical Sciences, Professor at the Department of the History of Medicine, National History and Culturology, I.M. Sechenov First Moscow Medical University (Moscow).

Nataliya Petrovna Shok – Doctor of Historical Sciences, Professor at the Department of the History of Medicine, National History and Culturology, I.M. Sechenov First Moscow Medical University (Moscow).