Medical photography

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Abstract

The photography is a method for creating a permanent image of an object through designing the image on a light-sensitive media (film or sensor). The word "photography" comes from greek ("photos" - light and "grapho" - write) and means "light-writing", or, in other words, a method of producing photographic image by using light and according to the laws of optics.(1)

Specific qualities of the photography are its objectivity and documentary. It records events, phenomena in nature, events from common life, personalities - everything that leaves a lasting memory of what happened before. And not only. With the help of the photography, we can create convincing and realistic works that through their deep impact develop mental capabilities and enrich the cultural knowledge of every thinking person, create new, different ideas for the outside world, evoke feelings, thoughts and emotions.(2)

Due to its rapid development, especially in the recent "digital" years, photography became an integral part of all spheres of life. Besides being a documentary tool, it is also an extremely powerful method of research and analysis for inaccessible to the human eye spheres and phenomena - the processes that takes place in an environment unattainable for man, studying the atomic nucleus, exploring the secrets of the cosmic space, observations on the functionality of the human organism and many others.

Keywords: *photography, medicine, diagnosis, archiving, documentation, photo*

Introduction

The medical photography is a specialized field of the scientific photography whose main tasks are the documentation and the archiving of clinical cases, medical and surgical procedures, and the follow - up of diagnostic and healing processes.(3)

It is also an integral part of the educational process and the scientific medical research. All the qualities of the photography, and first of all its ability to represent objectively and accurately what our eyes see, also determines its rapid penetration in the scientific field.(4)

For the first time photography was applied to medicine in 1840, when the French physician and bacteriologist Alfred Done from Charity Hospital in Paris does photos of bones and teeth cuts using daguerreotype with a microscope. In 1845, along with Foucault, he published the first medical atlas composed of macro photos. The most remarkable of all photographic illustrated books in the medical history before 1900 is undoubtedly the published in 1862 - a monography of the French neurologist Duchaine de Boulon. Creating a method of activation of the individual face muscles through electronic simulation, in 1856 he began to document each of his experiments through photography. Subjects of his study are the prisoners the psychi-

atric clinic of Salpetriere in Paris. Photographing the facial expressions, he calculates 53 emotions

that could be determined on the basis of muscles activity. (5)

The first attempts to shoot inside the body have been known since 1883 by Emil Benke who uses carbon arc lamps, lenses and reflectors to shoot human strings with an exposure of 1/4 s. In 1890, however, Walter Woodbury issued "Photogastros-copy", in which pictures are displayed from the inside of the stomach. In 1894, Max Nitze published bladder photographs using cystoscopy. Subsequently, this is the beginning of the endoscopy (6) that has been widely used in the diagnosis and the treatment of various diseases. In the more recent history, in 1945, Peter Hansel organized the first medical photographic service in a british hospital - at Westminster Medical School in London. After receiving a medical education, he realizes the need for audiovisual aids in the education of medical students and begin to teach. (7.8)

The first case of british medical photographers was published on May 27th 1948. The Association is engaged in training and registration of all

practitioners of medical photographers, including dentists and medical nurses, and their activities are recognized by all hospitals and medical authorities. In January 1951, the British Medical Journal (BMJ) was the first to publish medical and biological illustrations. The magazine is devoted to all aspects of the medical illustration. (9.10.11)

The application of photography in medical and dental sciences and practice is an indisputable fact. Very soon after the discovery of photography, it finds application in medicine. In the years it became an integral part of the doctoral work. In the practice and in the scientific research of the dentist, it becomes more and more important. There will not be a long time in which it will be mandatory for modern dental practice. The need to create photos in our day-to-day work is great and the perspectives almost endless.

The Photography of Lennart Nilsson

Functions of dental photography can be presented in the following way: the documentation of clinical cases, the stages of the treatments, the creation of treatment plans for complete solutions, the documentation of case studies, the report of treatment are only a part of the documentary value of medical and dental photography. Documentation means creation of real images subjected to analysis. In the treatment-diagnostic plan they should be performed before, during and after the treatment. Photographs should be precise. It is a responsible task and should be done after prior receipt consent written by the person that has being photographed. You must explicitly reference about what the photographic material will be used for. (12)

Creating photos before, during and after treating a patient is an important step. They can follow the healing-diagnostic plan. It helps to take into account the effect of the treatment. In certain cases, most often at the occurrence of disputes, they may have a probative value. For auditing of working in

practices, resolving disputes in court, proving the effect of treatment they could be an extremely valuable evidence. However, their use only takes place after an expert assessment made by expert, a medical photographer. Pictures submitted must be in RAW format for a clear identification of the lenses, camera, exposure and shooting information. (13) Using photo material can help us with ambiguities from ongoing treatment, lack of clear assessment by a patient, or attempts for a change of the concept of treatment.

Advertising / presentation / and management are the foundation of the popularization of every modern practice. Only with a well-made photo that looks beautiful and attractive we are able to manage and present / promote / our practice, the effect of our treatment and our options.

Scientific photography and in particular medical and dental photography are an integral part of the scientific research of each scientist. Along with this, it is also a mandatory part of the teaching pro-

cess. In this sense, the documentation of patients and the effect of treatment is an important moment. The created photographic material can be used in the preparation of lectures, presentations, articles, books, monographs, posters. All this would serve to present such material in an accessible form for adequate education and training.

The telemedicine is a new and fast a growing branch of the medicine. Here we can present clinical cases, refine diagnosis, conduct a discussion of a problem from distance. With the help of the modern information technologies, we could get feedback from other professionals in real time. The remoteness of other specialists in the case is without significance. The communication with a dental laboratory is also a an important and interesting moment. The exchange of information helps us about the shape and the color of the teeth, a common look of patient and others. Then the assignments become clear and precise. In the communication with the dental technician the right color transmission is very meaningful. In this meaning the balance of white and the ability to manipulate the light is an impor-

tant moment to get the most accurate result coming closer to the desired one. (14)

The observation of the treatment stages itself with the help of the photography often shows details and features that are otherwise difficult to capture. Possibilities for analysis are created and an accurate assessment of the diagnostic-healing control process.

Conclusion

The use of photography in medicine is a very powerful tool. The existence of distance problems, the need to consult with professionals away from the treatment, the need for documentation and analysis is just a small part of everything that the photography gives us in medicine. Together with the video shooting, there is also a training and a development of future and current doctors. The presence of special softwares for diagnosis and distance treatment is also developping with the help of photography. To the present moment the photography in medicine has been confirmed as a highly-needed diagnostic model for the development of modern science.

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