

THE PHOTOGRAPHY – A DIAGNOSTIC TOOL IN DENTISTRY

BOGDAN OPREA¹, DAN LAZAR², SEBASTIAN CERNUȘCĂ-MIȚARIU³, LAURA ȘTEF⁴,
ROMANIȚA GLIGOR⁵, CRISTIAN TANTAR⁶, MIHAELA CERNUȘCĂ-MIȚARIU⁷

^{1,3,4,5,6,7}“Lucian Blaga” University of Sibiu, ²Dental Art Private Practice Oradea

Keywords: dental photography, consultation, communication

Abstract: Dental Photography was and remains an indispensable constituent in the academic world of dentistry. For a very long time dental photography was considered to be an instrument exclusively reserved for scientific environment, its main utility consisting in documenting the current cases so that specific academic activities (e.g. courses, publications, conferences etc.) may take place. The development of technology as well as its accessibility transformed dental photography. It thus ceased to be a privilege of a small number of doctors and became an instrument useful to all practitioners who desire a qualitative increase of medical care. The importance of dental photography involves multiple aspects more or less applied in daily practice. In this article the authors seek to illustrate the importance of using dental photography as a useful diagnostic tool in the daily activity of the private dental office.

Cuvinte cheie: fotografie dentară, consultație, comunicare

Rezumat: Fotografia dentară a fost este și rămâne un element indispensabil în lumea academică a medicinei dentare. Foarte mult timp, fotografia dentară a fost considerată un instrument rezervat mediului științific având ca principală utilitate documentarea cazurilor în vederea desfășurării activităților specifice mediului academic (cursuri, publicații, conferințe etc.). Evoluția tehnologică precum și accesibilitatea tehnologiei a făcut ca fotografia dentară să nu mai reprezinte un privilegiu care se adresează doar unui număr redus de medici, ci un instrument util tuturor practicienilor care doresc creșterea calității actului medical. Importanța fotografiei dentare implică multiple aspecte mai mult sau mai puțin utilizate în practica cotidiană. În cadrul acestui articol autorii își propun să ilustreze importanța utilizării fotografiei dentare ca instrument util de diagnostic în activitatea cotidiană din cabinetul de medicină dentară privat.

The use of dental photography in dental practice is not new. Dental photography found its use since the beginnings of photographic technology. The period of classic film photography was characterized by a real “fight” concerning the photographic documentation of a clinical case. The most important disadvantage of this period was the time elapsed between the moment the photo was shot, the film developed and the one in which the final photo was made. In most cases, the shooting errors were found only after one or two weeks after the effective shooting, when the clinical case was already solved and the photo errors could no longer be corrected. The advent of digital photography has pushed all these disadvantages aside. Images are available for inspection in seconds; they can be displayed on large screens and can also be processed with special programs. Digital photography in dentistry is now also available to physicians with little expertise in the field of photography.(1,4)

Numerous articles, books and studies have shown and illustrated the need to introduce the practice of photography within the current medical act. By reviewing the bibliography we can state that the usefulness of dental photography is found in the following main areas: additional documentation element for completing medical records, documentation of treatments performed, increasing the quality of communication within the medic-patient – dental laboratory triangle, case presentations

(for scientific use), communication with insurance companies, education, marketing, forensic document, element helpful in achieving the digital planning of various therapeutic solutions, etc.(1,4,7,8.)

One of the less emphasized utilities of dental photography is that of a diagnostic tool. It is an aspect which in the past has been less prominent, but that is becoming increasingly visible today.

Naturally, the question arises: why use dental photography as a tool for diagnosis? To answer this question we must turn our attention to the diagnostic stage.

Dentistry, like any other branch of medicine is “the scrupulous art of observing the signs and details by which the practitioner understands the particular elements of the examined patient and may formulate an effective treatment plan.”(1)

On the other hand, fulminant technologies, materials, techniques and concepts offer the dentist an impressive arsenal of therapeutic solutions to meet the requirements of modern dentistry: aesthetics, functionality, conservation.

Developing a comprehensive treatment plan, fully responding to the above criteria must rely not only on extremely scrupulous clinical and paraclinical examination but also on a stage of reflection upon the collected information in order to provide an accurate diagnosis.

¹Corresponding author: Sebastian Cernușcă-Mițariu, Str. Ștefan cel Mare, Nr. 6, Sibiu, România, E-mail: confortmitariu@yahoo.com, Tel: +40269 212751

Article received on 14.01.2014 and accepted for publication on 25.03.2014
ACTA MEDICA TRANSILVANICA June 2014;2(2):279-281

CLINICAL ASPECTS

Returning to the question “is dental photography a diagnostic tool?” we can highlight the following arguments:

- it is non invasive.
- it is fast (time saving) and easy (painless) for the patient (figure no. 1).
- the quality of information (the image) can be instantaneously controlled.
- to provide details and information that can sometimes go unobserved during the first clinical examination. The possibility of magnification (the zoom in function) allows the highlighting of details invisible to the naked eye. This becomes extremely useful to doctors who do not have access to special magnification systems (magnifying glass, microscope) (figure no. 2).
- it is an immediate and universal form of communication.
- it can become a training system and may, by constant use, lead to an improvement of the doctor’s capacity of observation and analysis (figure no. 4).
- it is affordable. The technology is increasingly accessible from a financial point of view. Satisfactory results can be obtained with mid-level camera systems. But even an investment in professional photographic systems may prove cheaper and more productive through the benefits they bring.(2,3,5,6)

Figure no. 1. Dental photography during the first consultation meeting



Perhaps the biggest advantage of dental photography as a diagnostic tool is that:

- It allows the indefinite extension of the examination.
- The time spent by the patient in the dental chair is limited. Often a review meeting may be interrupted or disturbed by external factors beyond the control of the physician. Accumulated fatigue during a working day can limit the doctor's observation capacity during the examination of the last patient. The level of experience as well as the ability observation of the dentist is varied. Making a set of original images, will allow the doctor to examine them at a later date on the computer quietly and observe details that might have escaped during the clinical examination. Years later these photos may prove useful.
- Therapeutic solutions require very thorough modern aesthetic, dental-facial aesthetic analysis, including according to Fradeani M.(9) the following: facial analysis, dental-labial analysis, phonetic analysis, teeth analysis, gingival analysis. All this information cannot only be obtained from direct clinical examination but rather through a detailed examination of the digital photos on computer, possibly using

specific programs that allow highlighting of case specific parameters (figure no. 3).

Figure no. 2. Examining the photos on a large screen allows the observing of details that cannot be noticed with the naked eye



- In fact our philosophy is that on the first examination the physician should focus on gathering all possible information (history, intra and extra oral clinical examination, make an imprint for studying, complementary examinations, dental photos) and all of the collected information to be analyzed for diagnosis, treatment and possible solutions. In this way the physician gains time required for reflection and analysis outside his working hours to decide at the computer in quiet which steps should be followed (figure no. 5).

Figure no. 3. Using dental photography for the aesthetic, dental and facial analysis and for the implementation of virtual projections regarding possible therapeutic solutions



Figure no. 4. Using dental photos for analyzing the shape, colour and texture of the teeth



The second consultation meeting should be devoted to patient discussion. The doctor should summarize the information in an orderly and logical manner, easily understood by the patient.

Figure no. 5. Using dental photos for a detailed examination of a patient's clinical situation in order to formulate the final diagnoses and treatment solutions



Conclusions:

- The introduction of dental photography as a valuable tool for further examination is fully justified by the benefits it brings.
- Many other uses of dental photography make this into an indispensable element to any physician who wishes to operate with maximum professionalism.
- Technological developments in the field make the photographic equipment needed by a dental office very accessible both in terms of cost and ease of its introduction into the dental office “flow sheet”.
- The existence of instructional materials (online or printed) and of training programs in the field allow for a shortening of the time required in acquiring the basic techniques for making correct photos for everyday use.

REFERENCES

1. Loiacono P, Pascoletti L. Photography in Dentistry. Theory and Techniques in Modern Documentation. Milano, Quintessenz Edizioni S.R.L.; 2012. p. 133-146.
2. Chu SJ, Devigus A, Rade P, Mielezko AJ. The fundamentals of color: Shade Matching and Communication in Esthetic Dentistry, ed.2 Chicago, Quintessence; 2011.
3. Massironi D, Pascetta R, Romeo G. Precision in Dental Esthetics: Clinical Procedures. Chicago, Quintessence; 2005.
4. Christensen GJ. Important clinical uses for digital photography– JADA 2005;136(1):77-79.
5. Geissberger M. Esthetic Dentistry in Clinical Practice 1st ed, Wiley-Blackwell Pub; 2010. p. 19-28.
6. Terry DA, Leinfelder KF, Geller W. Aesthetic Restorative Dentistry: Material Selection & Technique - 1st ed, Everest Publishing Media; 2009. p. 487-505.
7. Wander PA. The application of photography in general practice, Br Dent J 1987;(162):195-201.
8. Aschheim KW, Dale BG. Esthetic dentistry: a clinical approach to techniques and materials 2nd edition, Mosby, Inc.; 2001. p. 269-289.
9. Fradeani M. Esthetic rehabilitation in fixed prosthodontics – esthetic analysis asystematic approach to prosthetic treatment Qunitessence Pub. Inc 2004;1:18-19.