



7. CAD/CAM TECHNOLOGY IN DIFFERENT FIELDS OF PROSTHETIC DENTISTRY

Author: Scobioala Liliana

Scientific advisor: Cheptănaru Olga, MD, Assistant Professor, Pavel Godoroja Department of Dental Propedeutics, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. CAD/CAM (computer aided designing and manufacturing) technology was introduced in dentistry in the year 1989, by Mormann & Brandestini in Germany and today it is widely used in all the branches of prosthodontics. Using these CAD/CAM technologies, various types of restorations and dental prostheses can not only be designed but also machined with accuracy and precision. Over the past 10 years, CAD/CAM technology has become extremely popular. The introduction and evolution of computer aided designing and manufacturing (CAD/CAM) technology in dentistry has greatly revolutionized treatment concepts and prostheses fabrication.

Aim of study. To analyze the existing literature research on advantages and limitations to the use of CAD/CAM technology in different fields of prosthetic dentistry.

Methods and materials. A comprehensive review of the literature was done through the MEDLINE and PubMed database for research articles with keywords “CAD/CAM technology”, “prosthetic dentistry”, “advantages”, “limitations”. The inclusion criteria for selection were clinical studies, laboratory technical research papers, case reports, and review articles with a comparison between CAD/CAM and conventional processing techniques for dental prostheses fabrication.

Results. The electronic research through MEDLINE and PubMed resulted in more than 90 titles in the English language literature, and 10 were relevant to determine the advantages and limitations of CAD/CAM techniques for dental prostheses fabrication. The advantages of using the CAD/CAM systems are: no traditional impressions, less appointment, high precision and accuracy, improve the qualities of restoration, eliminates the use of the laboratory equipment required for conventional LOST-WAX technique, speed, ease of use, and quality digital scans, faster design and fabrication, natural appearance of CAD/CAM restorations. The Limitations of using the CAD/CAM systems are the initial high cost of CAD/CAM systems and time and cost investment to master the technique. The CAD/CAM is used in different fields of prosthetic dentistry: removable prosthodontics, fixed prosthodontics, implant prosthodontics, maxillofacial prosthodontics.

Conclusion. The analysis of literature showed that CAD/CAM technology has large prospects in modern dentistry due accuracy and post manufacture process shrinkage. The quality of CAD/CAM milled dental prostheses surpasses the quality of conventional dental prostheses. So, there is improvement at the branch of digital prosthodontics and much more precision.