

“PRO” for Prosthodontics

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Charlie Chaplin had once said “always keep in your mind that you will always find your life a worthwhile one, just if you keep a beautiful smile on your face every time.” The power that a simple smile holds cannot be emphasised upon enough and rendering someone the ability to smile again with confidence is something that makes the field of prosthodontics so inspiring. We have come a long way from carving dentures out of ivory and using cattle teeth to simulating teeth within the jaw as seen in implant osseointegration. A study conducted by CDC over 2011 to 2016, revealed that one out of six adults aged 65 and older had lost all their teeth and around one-fourth of the adults aged 65 and older have 8 or less teeth making edentulism a significant setback and these numbers are expected to grow in the next two decades. Edentulism, besides being a functional and esthetic problem, has a psychological component as well. A recent encounter that was personally enriching was with a patient who had lost her last few remaining teeth due to severe periodontitis. She expressed the apprehension to smile caused due to her tooth loss. It was truly a gratifying opportunity to be able to restore her smile as well as her confidence. Occlusion is a dynamic state and restoring it optimally is of utmost importance. An in-depth analysis of various concepts of occlusion helps in deciding what is best suited for the patient. Crowns fabricated for endodontically treated teeth need to be replaced in a manner that harmonises the stomatognathic system which includes occlusion, muscles of mastication, soft tissues and the temporomandibular joint making the study of prosthodontics crucial. There has been a recent rise in tooth wear amongst all age groups. It can be majorly attributed to change in diet and increase in the habit of smoking from a younger age. The need for instant validation on social media has necessitated the demand to have a dazzling white “Hollywood smile”. This has led to the popularization of “Table-top Dentistry” which includes minimally invasive, adhesive bonded restorations like veneers, overlays, inlays and onlays. The field of prosthodontics, being at the forefront of advancements, has always embraced new and up-coming technologies. Moreover, it is a speciality that combines art and science to ensure optimum restoration, mastication, esthetics, phonetics and confidence in patients. Branemark revolutionized the field of implants by using titanium implants in which osseointegration established a direct interface between the implant and bone which was less than 25 microns without any soft tissue in between. Currently, implants for single and multiple missing teeth have become the standard treatment modality with a success rate as high as 98% over a period of 10 years. The all-on-4 concept in dental implants facilitates rehabilitation of edentulous jaws, without the need of bone graft, in one surgical step through the placement of four implants, optimizing the available bone, especially if achieved through guided surgery. Dr. Duret, in 1971 fabricated a crown for an abutment tooth with the help of computer aided designing and computer aided machining; making it the first of its kind to be ever used in the Registration number-E135 2 field of dentistry. All components of CAD/CAM are located in the dental clinic and fabrication of restorations can take place at chair-side eliminating the need for the laboratory steps, saving time, increasing precision and reducing errors concurrently. CAD/CAM, initially used for only fixed dental prosthesis became popular for rehabilitation of completely edentulous patients and is expected to gain more ground with time. MODJAW 4D, for example, is the latest digital scanner in dentistry which allows the exact movements of the jaw to be digitised, recorded and viewed in real time. Direct Metal Laser Sintering (DMLS) incorporates the use of metal to fabricate crowns and bridges by selectively sintering the alloy powder layer by layer by means of CAD/CAM. The field of prosthodontics also caters to the rehabilitation of maxillofacial defects which include cleft palate as well. In India, almost 2 in every 1000 births have a cleft palate

or lip. The rise and spread of the COVID-19 virus pandemic brought along with itself the deadly black fungus, Mucormycosis. It causes infection of the sinuses and necrotic ulcerations of the hard palate. Often such cases require resectioning and later obturators for the defect. A nonsurgical way to manage palatopharyngeal insufficiency is speech-aid prosthesis which is an obturator extending beyond the soft palate helping in better phonation and other physiological actions of the pharynx. Airway prosthodontics, a newer term replacing sleep prosthodontics, highlights the study of airway and its impact on the stomatognathic system. Multiple oral appliances have been fabricated and marketed since over 30 years to help with Obstructive Sleep Apnoea (OSA). Interestingly, dentists are no more compartmentalized to just the fabrication of oral appliances for OSA; females with hyper-responsive airway issues like insomnia and temporomandibular disorders and children with neurocognitive, systemic and craniofacial abnormalities require a multidisciplinary care in which prosthodontics plays a pivotal role. As a branch that is ever accepting of technology and with the world more eager to make things digitalised, the scope of prosthodontics is booming. The Gartner's Hype Cycle curve is a graphical prediction of the trends for new technologies. It comprises of innovation trigger, peak of inflated expectations, trough of disillusionment, slope of enlightenment and plateau of productivity. 3D printing of dental devices was placed in the slope of enlightenment as of 2018 and within 2-5 years, it is expected to reach a stable plateau of productivity. On a personal level, throughout the years as an undergraduate student, prosthodontics has helped in gratifying the artist within and what's more is that there are so many opportunities yet to be explored and ventured upon. A very important part of being a clinician is to always ensure that the treatment being offered, improves the quality of life for the patients and honestly, there's nothing better than making someone smile again with confidence.

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