

1.

Dentures for Elderly Persons - - from Hard to Soft

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The oral condition of edentulous patients today appears to be different from that of 30 years ago. In particular, the alveolar bone is highly resorbed, the oral mucosa is thinner, and saliva flow and oral perception are deteriorating. About 30 years ago, it was proposed that soft denture base materials should be tissue-friendly, and in fact, a lot of products of this kind have come to meet this requirement.

On the other hand, in clinics, rigid materials have been used in most cases because they have given a high priority to durability. This seemed appropriate as long as the patients are in good health. However, as the number of aged persons has increased, more and more patients have become unable to cope with the hard material.

Under these circumstances, soft lining materials are highly desirable. This was previously commonly denied because of the poor quality of soft materials, -but, modern soft lining materials have recently become much better, so when they are used appropriately, they are much more effective than in the past. It is confirmed that the application of soft liners having viscoelastic properties would lead to the most marked improvement in masticatory function. The improvement in masticatory function compared with hard resin was found to be in the order: acrylic resilient>silicone resilient>acrylic tissue conditioner. The results suggest that the use of materials with higher $\tan \delta$ (loss tangent, viscoelastic property) and G' (shear storage modulus, hardness) provides the most optimum masticatory function for the patients requiring the provision of soft liner on their dentures.

Our goal is to transfer the dentures into the museum during the 21st century. Until we achieve this, soft liners will fill gap between denture and tissue, and between satisfaction and dissatisfaction with the dentures. Although, it is true that edentulism is decreasing, I still believe as well that the soft option is useful and can help to satisfy edentulous patients for 2 or 3 more decades.

2.

Intracapsular TMJ Disorders: Diagnostic and Management Considerations

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Temporomandibular disorders represents a large group of musculoskeletal conditions of the masticatory system. The two most common TM disorders are masticatory muscle pain disorders and intracapsular pain disorders. This presentation will discuss the differential diagnosis and management of intracapsular pain disorders. Functional anatomy of the temporomandibular joint will be reviewed first. This will be followed by a description of the various alterations that can occur in the TMJ and their associated symptoms. Included in this review will be the proper indications and uses of occlusal appliances as determined by the research data collected over the last 20 years. Successful management of intracapsular pain disorders can only be achieved once the clinician appreciates the various types of conditions that can occur in the TMJ as well as the natural course of these conditions.

3.

Occlusion and Other Factors of Importance for Temporomandibular Disorders/TMD

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The relationship between occlusal factors and the health of the masticatory system has been one of the most controversial areas in dentistry. For many years the dental profession believed that occlusal interferences would lead to TMD. However, this opinion has gradually weakened since there is a lack of convincing evidence supporting this relationship. Several treatments not related to dental occlusion have also proved to be effective in management of TMD. At present, most so-called TMD experts deemphasize the importance of occlusion in the etiology of TMD, whereas a majority of practitioners still

adhere to a concept focusing on occlusal factors in diagnosis and treatment of TMD. This controversy has sometimes become very dramatic, especially in the USA. It is well established that simple reversible therapy is efficient for helping a majority of TMD patients. Even if most studies have failed to find any close correlation between occlusal factors and TMD signs and symptoms, occlusion cannot be neglected as it plays an important role for comfort and function of the masticatory system. There is an obvious need for continuing research on the relationship between the occlusion and TMD using strict, evidence-based study methods in order to improve patient management. A search of the current literature on TMD will be presented.

4.

Ceramic Reconstruction (CEREC[®]) - an Ingenious Concept in Restorative Dentistry?

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CEREC is a computerized method to produce ceramic reconstructions chairside. It had been developed in the Eighties by Professor Dr.med.dent. Werner H. Mörmann und Dr. sc. techn. El. Ing Marco Brandestini at the University of Zürich in Switzerland. The most actual version in the CEREC-Series is CEREC 3. It is a robot in which CAD/CAM-techniques are applied and prefabricated dental materials (ceramics and polymers) are used. Target group are primarily dentists; since CEREC InLab is on the market dental technicians also.

According to the general CEREC-principle, an optical impression is used as "worksheet" to construct every restoration in/on any single tooth - from a simple class I- or class V-restoration to any partial or full crown - in a very simple but sophisticated manner: The CEREC-user only has to design the so-called "bottom line", all other constructions are generated automatically. Besides that every modification may be introduced manually. The milling process is fully automatic. The restorations are adapted to the tooth structures by modern adhesive techniques.

From survival analyses it could be shown, for example by the study of Reis and Walther (2000), that from 1,010 inlays which were applied to the posterior teeth in 299 patients in a routine dental practice, after 9 -12 years the probability of success (calculated by Kaplan-Meier Analysis) decreased to 90% after 10 years ($s = .018$) and 85% after 11.8 years with no further loss until the 12-year

termination point. Measuring parameter as inlay fracture, cusp fracture, new proximal lesion, recurrent caries, persistent hypersensitivity, endodontic complications, prosthetic and unknown causes (with replacement alio loco) respectively showed no significant difference in clinical success between maxillary and mandibular teeth, neither between the sizes and the outlines of the restoration. However, premolars rated better than molars, vital teeth better than non-vital teeth. The application of dental adhesive techniques increased the probability of success. Only 81 (8%) failures were recorded, mainly due to fractures of the ceramic and tooth structure (50%).

In summary, CEREC using simple but sophisticated hard- and software in combination with trustworthy modern dental materials is an ingenious and clinical reliable concept in restorative dentistry with the potency of an enormous impact at high quality dentistry and dental education. Indeed, CEREC is an ingenious concept in restorative dentistry.

5.

Fiber-Reinforced Composites - New Alternatives for Fixed Prosthodontics

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Development of oral biomaterials has been focused on composites of various kinds. From the prosthodontic point of view, the most promising composites are fibre-reinforced composites (FRC). The use of FRCs in prosthodontics is rapidly growing at the moment and their applications are in FRC full coverage crown bridges, surface retained bridges, inlay retained bridges and in root canal posts. Interestingly, the currently available data of biomechanics and preliminary clinical findings suggest that combination of retentive / adhesive elements of different kind of bridges can now be combined to a single FRC bridge/restoration. By this, odontological and subjective needs of the patient toward fixed prosthetic therapy can better be taken into consideration. This treatment philosophy is called "the dynamic treatment approach". Successful use of FRC in the dynamic treatment approach put some demands on FRC material. The use of FRC should be easy to use for dental technician and for dentist, the adhesional behaviour of FRC to composite resin luting cement should be good enough, and finally, the biomechanical properties of the FRC should correspond the needs of the masticatory system. Recent development in