Interview: The patient should be told the truth

What other factors besides smoking, drinking and HPV are currently being investigated, and what is their malignant potential?

People chew betel nut preparations (e.g. paan masal and gutka) in parts of India, Pakistan, Bangladesh and surrounding areas. These cause initial fibrosis of the oral tissue, termed “submucous fibrosis”, which carries a high risk of causing oral cancer of possibly 30 per cent. Submucous fibrosis can arise even in young individuals and is irreversible, and thus patients are likely to have a lifelong risk of mouth cancer, even if they stop the causative habit. The nightmare scenario is that when examining a patient with submucous fibrosis the mouth opening can be so small that a clinician may be unable to see the cancer.

Mouth cancer can also arise in patients who have rare genetic disorders, such as Fanconi anaemia and dyskeratosis congenita, but the most common oral disorder that can affect the lining of the mouth (the oral mucosa). This is a global disorder that typically occurs in middle-aged and older women. It is a chronic immune disorder that may cause painless white patches that sometimes are accompanied by painful erosions or ulcers. It affects about 1 to 2 per cent of the population and is the most common disorder to affect the lining of the mouth (the oral mucosa).

It has been suggested that 1 to 2 per cent of patients with oral lichen plans will develop mouth cancer, but this risk is highly unpredictable because it does not appear to be consistently associated with the duration or type of treatment of the lichen plans, nor the age or sex of the patients, nor their alcohol or tobacco habits. The good news, perhaps, is that 98 to 99 per cent of patients with oral lichen plans will not contract mouth cancer.

Isolated white or red patches on the oral mucosa (sometimes termed “leukoplakia” and “erythroplakia”) have malignant potential as well, but these are actually uncommon, particularly the latter, compared with oral lichen plans.

Besides new treatment concepts, pre­individuals might be the most effective strategy against oral cancer. Why do so many dentists still appear to overlook obvious signs of the disease, and is current screening procedures have shortcomings?

The great majority of patients ultimately found to have mouth cancer will have been referred to a specialist service because a dentist or other dental professional will have noticed something abnormal. He or she might not have known what it was, but if he did the correct thing by referring the patient to a specialist.

Screening for possible mouth cancer is straightforward. It is just

Dental Tribune Indian Edition - September 2013

Interview

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Dental Tribune International

www.dental-tribune.com

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© Jaypee Brothers Medical Publishers (P) Ltd., India

Published by: Jaypee Brothers Medical Publishers (P) Ltd., India

Published by: Jaypee Brothers Medical Publishers (P) Ltd. (48/254 A, Anand Road, Daryaganj, New Delhi 110002, India)

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Impression and registration for full-arch implant dentures

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Introduction

Usually, a full denture is delivered following tooth extraction or implant insertion of a fully edentulous arch. A denture is usually used until the final restoration is performed. A well-designed full denture should fulfill the following criteria: 1) correct vertical height and maxilla-mandibular relationship; 2) accurate occlusion; 3) appropriate choice of teeth with regard to shape, length, width and position; 4) adequate lip support; and 5) proper function and aesthetics to meet the patient’s expectations. The final restoration should fulfill or surpass these requirements. Obtaining a correct impression and accurately evaluating the interocclusal relationship (e.g., interocclusal distance, occlusal recording and determination of the exact position of the placed implants) are often challenging and time-consuming tasks.1

The aim of the current report is to present an impression and registration technique that allows the transfer of the interocclusal relationship, occlusal recording and esthetics that were initially applied to produce a full salusal recording and esthetics that ming tasks.1

Materials and Methods

Following multiple extraction of a non-salvageable rest dentition and the placement of six dental implants in positions #4, #5, #6, #11, #12, #13, a full denture was fabricated. After the extraction sites had healed and denture sites were eliminated, the function and esthetics of the denture was optimized. If necessary, angulations, shape and color of the denture teeth and the shape of the denture base were corrected (Fig. 1a). The resulting denture was used by the patient until the final restoration was delivered. For the final restoration of the maxilla, an implant-retained denture with telescopic crowns as attachments was planned.

After the implant was uncovered, the denture was modified to allow sufficient space for the healing abutments. A duplicate of the denture was made out of clear resin (Paladur, Heraeus, Hanau, Germany, Fig. 1b). A trial of the DentDu was performed and minor occlusal discrepancies were corrected (Fig. 1c). Bite records were taken in centric occlusion with modeling resin (pattern resin®, GC, Alsip, IL; Fig. 1c), using the casts of the original denture. Afterwards, the DentDu was placed in an articulator and a controlling of the occlusion was made (Fig. 2a) with the bite records. A pickup transfer system consisting of a titanium impression post and a plastic impression sleeve (Dentegris, Duisburg, Germany, Fig. 2b). The DentDu was carefully modified by creating internal clearance in the area of the implants so that it could be applied as an individualized custom tray. This permitted it to be fully seated when the impression posts were in place. Impressions were generated by a polyether material (Impregum, 3M ESPE; St. Paul, MI). During this process, the DentDu was kept in centric occlusion using the bite records (Fig. 3a).

The titanium impression posts were connected with the implant analogues and with the plastic impression sleeves (Dentegris), which were embedded in the impression material (Fig. 3b). A master cast was then fabricated and articulated with the help of the bite records (Fig. 3c, Figs. 4a & 4b). Customizable abutments (Dentegris) were taken to fabricate the implant abutments. Parallelism, angulation, position and shape of the implant abutments were determined using a silicon key fabricated from a custom tray used to fabricate the implant abutments. Two alternatives for customization of abutments selection: 1) UCLA customizable abutments (UCLA, Dentegris) for casting with a gold alloy (for example, Peritard PA, Au 68.50 %, Wieland, Pforzheim, Germany, Fig. 6a) or 2) platinum-iridium customizable abutments (PTIR, Dentegris) for casting with a chromium cobalt (CoCr) alloy (for example, Ankait, Ankia Guss, Waldaschaff, Germany, Fig. 6b).

After casting, the customized implant abutments were grinded, polished and served as the basis for the fabrication of electroformed puregold copings with a thickness of 0.25 mm (AGC Galaingold, Au > 99.9 %, Wieland, Fig. 6c).2-4 The framework was then constructed via CADCAM. To ensure proper functioning of the framework, a metal mock-up and a temporary fixed denture (TFD) were delivered (Figs. 8a & b). From this point on, the customized abutments remained fixed in order to avoid any possible inaccuracies. The electroformed copings were placed on the implant abutments (Fig. 7c). The mock-up was placed over the electroformed copings and the occlusion was checked with the bite records (Figs. 8a & b). A final impression with a polyether impression material (Impregum, 3M ESPE) was taken with electroformed copings. The mock-up was fixed on the implant abutments (Fig. 7c). The mock-up was placed over the electroformed copings and the occlusion was checked with the bite records. The mock-up was then left in place until the delivery of the final restoration (Fig. 8c).

The new master cast was articulated with the help of the gold copings and the mock-up. The metal framework
The milled temporary fixed denture is placed as a cover denture. From this cover denture, a DentDu could be fabricated and further used as described above (Figs. 13a–c). Porcelain is a possible material for veneering of fixed-denture frameworks. If the angulation of the implants does not allow for taking impressions in the above-described way and an open-tray impression is preferable, fenestrations can be fabricated into the DentDu (Fig. 14).

Discussion

The reconfiguration of the fully edentulous arch with implant-retained dentures necessitates thorough planning and a precise and passive fit of the superstructure. A previous study demonstrated that a passive fit between the implant superstructure and the underlying abutments is essential for the long-term success of the implant prostheses. To achieve a passive fit, an accurate positioning of the implant replicas in the master cast must be assured. The impression technique and the splitting of the implant copings are factors which may contribute to errors in the final positioning of the implant analogues, thus leading to inaccuracies in the fit of the final superstructure. Furthermore, the angulation or proxim- ity of the implants may inhibit proper seating of the impression copings and caps, which may also have a detrimental effect on the registration of the implant position.

The above-described procedures can be also performed in cases in which a fixed denture was planned for the rehabilitation of the full-arch frameworks (Figs. 13a & b, Figs. 12a–c) and in cases where part of the natural dentition is periodontally stable and can be applied as abutments. In these cases, the immediate full denture can be fabricated using a self-curing composite cement (ASC Cem, Wieland, Fig. 10).

If an open-tray impression is preferred, only minor changes to the procedure are necessary. This method is based on a previous publication.13 In cases such as this, it is advisable to fabricate two DentDus. The impression can be taken by the first DentDu; the second DentDu is used for the remaining steps. Customized implant abutments are applied instead of a metal bar, galvano copings allow a precise transfer coping, and secondary telescopes as well as different technologies are employed for the transfer of implant positions and for the construction of the superstructure. Customized implant abutments allows for better angulations and shape, for improved occlusal force transmission from the crown to the implant and the bone, and also for facilitating the fabrication of an esthetically pleasing implant-supported denture. Ways in which abutment design contributes to improved esthetics include changes in the location of the crown and changes in the dimension and/or form of the restorative platform. Additionally, features of the abutment design contribute to the health and dimensional stability of the soft tissue. Current attempts to objectively define implant-esthetics harmonies have focused on peri-implant mucosal parameters.14,15 The introduction of the UCLA abutment provided a custom solution for implant resto- rations. This direct-implant resto- ration concept provided adaptability. Through waxing and casting, the height, diameter and angulations can be addressed in order to provide a wide range of clinical solutions for problems associated with limited interocclusal distance, interproximal distance, implant angulations and related soft tissue responses.16

Dentists should always keep an open-tray impression and necessary changes in the shape of the restoration and occlusion can be made. Making these changes on the mock-up was easier and less time consuming than making them on the metal framework itself, and it was then possible to transfer them directly to the final framework. Furthermore, the mock-up almost “splitled” the electroformed gold copings during the impression, allowing for the exact transfer of the abutment position. At the same time, the vertical height and interocclusal relationship were recorded. The delivery of a melted temporary restoration permitted a slow and non-progressive loading of the implants, which then leads to bone remodeling. Abutments were left in place after mounting. Combined with the fabrication of a new cast, this further decreased the risk of inaccuracies during the transfer process.

Conclusion

The method described here can be used for full restoration of edentulous arches with both fixed and removable implant supported dentures. Accurate impres- sions can be accomplished and occlu- sions, vertical dimensions, as well as implant positions can be trans- ferred while facilitating the full-arch restoration process. In addition, this technique results in a reduction of the required chair time.

Disadvantages of this technique lie in the fact that the quality of laboratory technician’s work meets higher demands than usual, and that the clinician also needs to acquire some additional skills. Further disad- vantages of this method include the need for a highly qualified technical lab and higher technical costs relative to those associated with prefabricated titanium implant abutments.

To date, this method has not been applied in conjunction with immediate implant loading. However, dentists and patients have come to expect this level of rehabilitative accuracy, precision, long-term success and aesthetics.

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Editorial note: A complete list of references is available from the publisher.