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Study subjects had a periodontal exam and were categorized into groups according to their waist circumference and body mass index. Results showed that among people between the ages of 30 and 34, obese individuals had a 76% higher prevalence of periodontal disease compared to non-obese individuals. Today's young adults are less healthy and more sedentary than those in previous generations. Those who are overweight are more likely to suffer from asthma and related respiratory diseases. Past evidence has linked these respiratory conditions to early tooth loss and other oral health problems.

Dentinogenesis Imperfecta
The National Institute of Dental and Craniofacial Research (NIDCR) has created a mouse model with teeth deformed in a similar way to people with dentinogenesis imperfecta (DGI). The model will allow scientists to learn more about how the hereditary disorder affects teeth and provides a basis for developing treatments.

Dentinogenesis imperfecta is classified into three subtypes. The teeth can be brittle or broken with a somewhat translucent appearance. Most of those severely affected with DGI-III are candidates for dentures or implants by age 30 due to dental interferences.

As a transition, the removable appliance is the first choice amongst orthodontists. Not only does it replace the missing teeth, but it also functions as an orthodontic retainer. Orthodontic retention is very important post-orthodontic therapy for at least 9-12 months in which the patient wears the retainer 24 hours a day to allow for proper bone remodeling.

The inconvenience of this appliance is quite obvious, especially when eating and talking. The social embarrassment of showing “no teeth” when eating in front of their friends can be quite disturbing.

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Bonded Retainer
The Maryland Bridge satisfies the dilemma of a removable prosthesis. However, all know its disadvantages, especially if this is not going to be the final restoration. The bonded retainer is more difficult to maintain because it is fixed attachment to the adjacent teeth and tends to debond with ec- cusal stress. In order to create a more “permanent” appliance, undercuts or grooves may need to be placed on the lingual of the adjacent teeth.

Transitional Implants
A unique approach involves the use of transitional implants that are normally utilized to sup- port partially or fully eden- tulous provisional restorations, and have been widely discussed and documented in the litera- ture.4 Using these fixtures to retain a provisional restoration in a single tooth gap created by congenitally missing laterals in a teenager has not yet been pub- lished. This article describes such a process.

Treatment Plan
The significant success rate of osseointegrated implants is well documented. The recom- mended minimum age for a pa- tient considering such treat- ment is somewhat vague.

If we use accepted criteria regarding implant placement in the growing child, then a num- ber of young patients who have congenitally missing teeth, specifically lateral incisors, will need to wait 3.5 years before having permanent replace- ments; the temporary alter- natives have been limited with nu- merous disadventages.5

The transitional implant work-up is similar to that of per- manent implants. It is com- prised of a thorough medical/dental diagnosis and history with periodontal evalua- tion, radiographs and models.6 The treatment plan coordi- nates the surgical, restorative and laboratory procedures so that the provisional restoration can be placed within 24 hours of sur- gery and documented in the litera- ture.4,5 Using these fixtures to retain a provisional restoration in a single tooth gap created by congenitally missing laterals in a teenager has not yet been pub- lished. This article describes such a process.

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The prospect of eliminating a removable orthodontic appliance for a young teenager is incredibly exciting.

Case Study

A healthy 14 year old, white female presented to our office for a pre-implant work-up and evaluation of edentulous areas created by congenitally missing laterals at #7 and #10 (Figs. 1, 2, 3). She was in the finishing stages of her orthodontic therapy, and the orthodontist wanted to make sure that the space between the roots of the teeth adjacent to the edentulous spaces (#6, 8, 9, 11) were adequate for permanent implant replacement.

At the time of our evaluation, the patient made numerous comments about how she “hated” her present removable appliance. I mentioned to both her and her mother that it would be approximately four years longer before she could have permanent implant placement, but that we would satisfy her immediate need with the use of a single transitional implant in each tooth gap. Their excitement about this concept led to scheduling for this transitional implant procedure.

Surgical Phase

Infiltration of local anesthetic was used in the maxillary right and left anterior segments both labially and palatally adjacent to #7 and 10. The osteotomies were performed with the longer size profile drill (Fig. 4) its sharp point makes directional placement rather easy. In this instance, because the osseous anatomy was quite evident, no flap was required. To overcome the labial concavity in this area, the osteotomy must be drilled in a more palatal direction (Figs. 5, 6). When the osteotomy is complete, the 21 mm MTI was placed to the full depth (Figs. 7, 8). It is important to note that the labial/lingual alignment is not as important as the mesial/distal orientation. This is due to the ability to bend the MTI at the neck, just as the laboratory designs the provisional crown with broad, tight tooth shade.

Prosthetic Phase

The patient, with the MTI transfer copings in place, arrives at the restorative dentist’s office ready for the impression. The restorative dentist takes a rubber base or polyvinyl impression of the maxillary arch to pick up the transfer copings. An opposing model and bite registration is obtained, along with a tooth shade.

Within 24 hours, a laboratory provisional is fabricated (Figs. 10, 12, 14) using the singular modular coping supplied by the company (Figs. 11, 12). During this short waiting period, soft rubber protective caps are placed over the MTI implants to protect the lip and tongue from any undue trauma (Fig. 13).

It is important to make sure the laboratory designs the provisional crown with broad, tight interproximal contacts to allow for resistance to off-angled forces. The patient is instructed on appropriate oral hygiene procedures and evaluated. A new orthodontic retainer is fabricated of the existing one modified. Final radiographs are taken.

Summary

I have presented a unique approach to temporarily restoring edentulous sites in teenagers resulting from congenitally missing maxillary laterals. The benefit of eliminating a removable orthodontic appliance for a young teenager is incredibly exciting. Both patients and their families have expressed appreciation of this effort. It has been 18 months since the patient in the presented case has received her transitional restorations. All aspects of the MTI implant, and both hard and soft tissue have remained quite healthy (Fig. 15). While I am convinced that this technique has great potential and merit, additional time will be required for us to be confident that these transitional implant-supported restorations will remain stable over 4-5 years.

Acknowledgements

Orthodontics—Dr. Clifford L. Anzilotti, Prosthetics—Dr. Mark A. Fortunato, Labor—Larry A. Mittleman, CDT

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