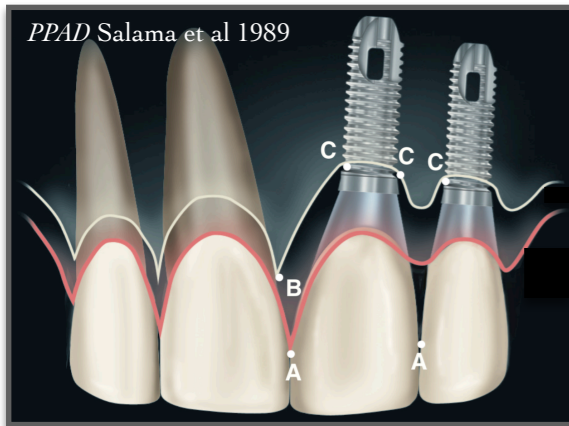


SOFT TISSUES BETWEEN ADJACENT IMPLANTS

Soft tissues differ between teeth and implants:

Around a tooth, Sharpey's Fibers make a firm connection of gingival fibers at right angles into the cementum with a 1-3mm sulcus depth before this connective tissue attachment begins. Bone extends coronally interproximally towards a scalloped CEJ that is also more coronal interproximally.

The gingival connection to the implant is weaker and made through hemidesmosomal attachment. The sulcus depth is deeper, particularly interproximally, reaching an average of 5-6mm rather than 3mm. This is because no bone extends coronally interproximally around an implant.



- A: Interproximal Crown Contact
- B: Bone near CEJ of tooth
- C: Bone at platform of implant

Therefore, implants next to each other typically loose interproximal tissues, making any implants in sites other than #8-9 very obviously man-made replacements when compared to natural contralateral teeth with normal interproximal tissues.

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DIFFICULT ANTERIOR ESTHETIC SITUATIONS

The restoration of two or more continuous anterior teeth can be very difficult. Not only are teeth missing, but ridge dimensions can be deficient as a result of trauma or developmental defects such as cleft palate.

In the past, removable partial dentures could make up for both tooth and ridge defects. But removable appliances have their obvious limitations. Even fixed prostheses are available as long as enough teeth, or implants, are present to serve as abutments.

Using implants alone can fall short of esthetic requirements particularly when implants are side by side and interproximal tissues are lost. The adjacent panel reviews this in more detail.

Implants can produce satisfactory results as long as the implants are not side by side, and as long as the pontic space can be built up sufficiently with soft tissue. The example from Salama et al below illustrates an implant fixed partial denture replacing teeth #7-9 with soft tissue grafting and a low/flat tissue scallop.



PPAD Salama et al 1989

The best results are achieved when teeth can separate implants, in which case orthodontic tooth movement (or even autotransplantation) can reduce edentulous spaces to more manageable dimensions.

This issue of **ProbeTips** will review an example of how an edentulous space of three teeth was managed, and consideration of alternate treatment options.

Pamela A Nicoara DDS MSD PLLC

PERIODONTOLOGY IMPLANTOLOGY ORAL MEDICINE

We're Going Digital!

This November newsletter will be the last to be mailed out through traditional US Postal Service.

Future newsletters will be emailed to the address we have on file for you. If you wish to receive the newsletter at a different email address, please let me know!

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PROBE TIPS

A QUARTERLY PERIODONTAL NEWSLETTER

We're Going Digital!

See back panel for details

BY PAMELA NICOARA DDS MSD

Implants and Orthodontics Case of the Quarter



VOLUME 12, No. 3

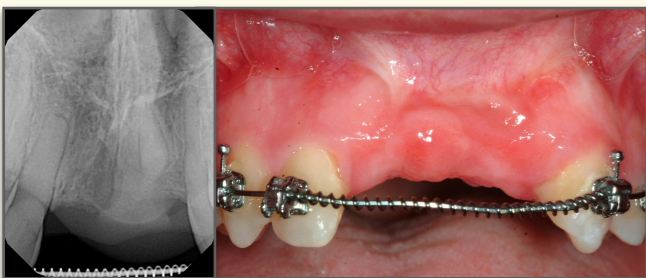
NOVEMBER 2019

Implants and Orthodontics Case of the Quarter

INITIAL EXAM AND TREATMENT PLANNING

Katie came to my office in 2015 at the age of 16 and already in orthodontic appliances. She had sustained a traumatic injury from a horse kick to the face about a year earlier. She had been referred to replace the missing front teeth.

The ridge and soft tissues were thin and deficient. Radiographically, there were areas of missing bone and a retained root tip.



Several things crossed my mind.

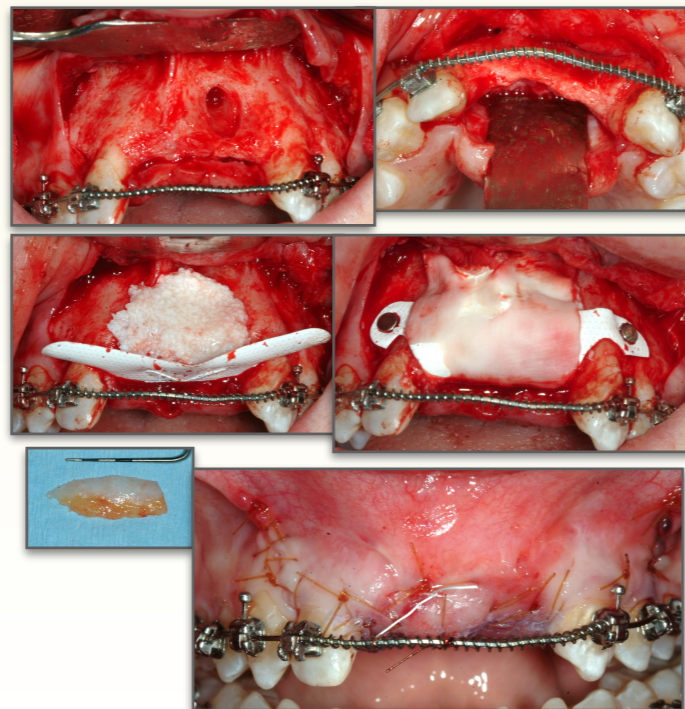
1. Her thin biotype was going to make grafting difficult and that a less than ideal outcome may result.
2. I knew that implants side by side can be difficult to control esthetically, and that soft tissue grafting can fall short even without a thin biotype.
3. If I spread the implants out and used a fixed partial denture, this would result in a lifetime of higher risk for peri-implantitis due to increased difficulty in maintaining optimal oral hygiene by needing more tools than simply a tooth brush and floss.

Because she was already in orthodontic appliances, and because tooth #11 was a shape that was suitable for substitution as a lateral, and because I hadn't yet fully understood the

potential for autotransplantation (in which case a lower premolar could have been used to replace #9, and spaces closed to allow for implant #8 only), it was decided to use implants in sites #8 and 9, moving #11 to the lateral position, and using an implant to replace #11. Any loss of papilla between implants in sites #8 and 9 could be more easily absorbed esthetically because there would be no contralateral natural side to compare to. Hygiene would be easier without a fixed partial denture, and hopefully the implants would have the greatest chance for success as Katie is young and needs to use these implants for many years to come.

RIDGE AUGMENTATION

The first step was to create the tissues necessary for implant replacement of #8 and 9.



IMPLANT PLACEMENT AND TEMPORIZATION

After 6 months of healing, the titanium reinforced membrane and tacs were removed. At the same time, implants were placed in the central locations based on the center of her face relative to her nose and the philtrum of the lip since the teeth were not yet in their ideal locations. After 4 months of healing, the implants were restored with temporary crowns to assist the orthodontist in moving #11 against implant #9.

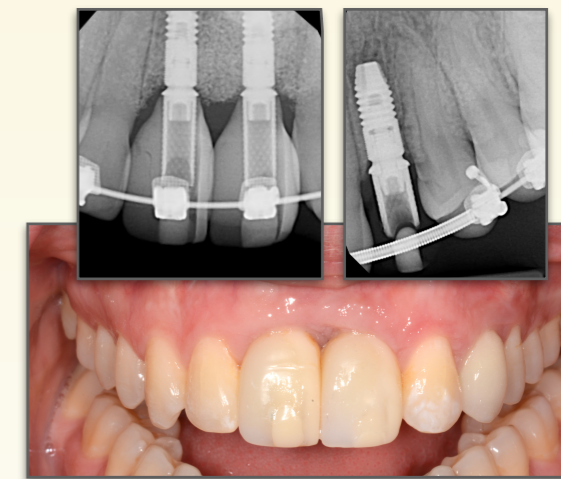


Once #11 was in the correct location, implant #11 was placed. The canine was further extruded and reshaped, and the implant temporized after 4 months.



TEMPORARIES TO FINALS

After braces were removed, it was time to transition from the temporaries below to final restorations:



Clearly the interproximal papilla is shorter than ideal, but the the patient is very happy. As long as hygiene can be maintained, long term tissue stability is expected.

Final Restorations



Orthodontist: Dr. Raymond Maxwell
Restorative Dentist: Dr. Kyle Gill

REFERENCES

PPAD. Salama et al. 1989.

Complete references available on request.