Predictable Root Coverage For Mandibular Incisors

Dr. David Wong posted three great cases demonstrating highly aesthetic results in this challenging area. Log on to the message boards of Dentaltown.com today to participate in this discussion and thousands more.

Root coverage in the mandibular incisor region is often a challenge in periodontal plastic surgery for several reasons. First of all, there is often a high frenal attachment and shallow vestibule present as well as thin or nonexistent quantities of keratinized and attached gingiva. This poses problems during root coverage procedures due to compromised blood supply as well as excess flap tension which hinders graft stabilization. Furthermore, close root proximity and thin interproximal bone may lead to little to no papillary gingiva available for adequate flap design and suturing. Finally, anterior crowding often results in incisors which are labially positioned and often have large facial dehiscences. Because of these anatomical considerations, clinicians are often limited as far as choosing the proper technique for predictable root coverage. This article presents a detailed case report as well as other supporting cases demonstrating predictable root coverage utilizing a subepithelial connective tissue graft in the mandibular incisor region.

Fig 1: Pre-operative view of recession on teeth numbers 23-25.

Fig. 2: Connective tissue graft harvested from the right palate.

Fig. 3: Connective tissue graft sutured to recipient bed using 7-0 Vicryl sutures.

Fig. 4: Completed suturing with 7-0 Vicryl sutures.

Fig. 5: Results at six months showing 100 percent root coverage.

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Fig. 6: Case 2. Pre-operative view of numbers 23-25.

Fig. 7: Case 2. Final results utilizing the same flap design and technique as above.

Fig. 8: Case 3. Pre-op of teeth numbers 24-26.

Fig. 9: Case 3. Final results showing 100 percent root coverage.

Beautiful results. How is it that your healed cases look so natural and other periodontal grafting cases have that thick blob of tissue still present so that you can see where the graft was done? Also, are you a periodontist or a GP?

I believe the key for me is that all my incisions are sulcular, so no scarring occurs. Also, I use only 7-0 suture, which I believe causes the least irritation. Very careful and neat suturing is key. It should look clean and neat. I am a periodontist. I graduated in 2002 from the University of Missouri-Kansas City.

I believe the explanation for a blob vs. your result is based on the different types of grafts that are available. Your graft is a subepithelial connective tissue graft which means the connective tissue is placed underneath the tissue.

Others common grafts are submarginal or marginal grafts which will show the characteristics of the palatal tissue and actually can plump up over time.

In fairness the type of suture, vertical incisions or not really does not change the appearance but rather where the tissue is placed.

Great cases, regardless.

Thanks for presenting such beautiful results. Danny

These are great cases. You used 7-0 Vicryl. Is that an absolute for you or are there other choices that are equally viable and that are your particular way?
I use 7-0 Vicryl for lower incisors because the tissue is often so thin and the papillae so narrow – it just makes me feel better. I know lots of guys who use 4-0 and 5-0 suture and do just fine. In addition, I think one of the keys to quicker healing is having thin clot formation between the flap and the graft, so once again, I feel better knowing I’ve got 7-0 suture under a flap and not 4-0 or 5-0. There is no documented proof that I know of that would confirm this – it’s just me. For cuspids, bicuspids, and molars, I do us 5-0 Vicryl.

Beautiful cases... especially the last one!
What type of flap design are you using? Is it a basic envelope flap or are there some releasing vertical incisions? Just curious.

Beautiful work on these cases. You too, Danny. You guys show a true passion for your work and it shows in your skill and artistry. I am not posting this just to give you guys a pat on your back. I want to ask you a few questions. I am a general dentist and do not do any periodontal Sx [surgery] or place any implants (I’ve been restoring more and more over the past two years). I know that there are many GPs who do perio Sx or place implants or both. My question is, should they or should this be left to the specialists? I was interested in taking an American Dental Association Continuing Education Recognition Program surgical implant mini residency in my neighborhood. I have had a good relationship with my periodontist and he has referred me many good implant cases to restore. He does nice work. I have become interested in placing implants on a small and large scale. I am only worried about affecting my relationship with him. What do you think? ■

When you have these types of difficult, fragile cases, have you ever considered ortho first? I’m sure it isn’t necessary, but I wonder if it would help long term or do you think the thinner bone would be a problem.

To get any decent results in a case like this, it would have to have stripping and would only word if the facial type was dolico or mesofacial and the symphysis was pretty narrow, thus having the cortical plates (b and l) close to each other.

(Asking you, too, Danny.) ■ continued on page 22
I have been doing a few SECTG procedures lately. I am very interested in your specific management of the donor site. Could you please post a few pictures of the donor site showing how you harvest and close the wound? I have seen several different approaches. I have found that 6-0 chromic gut is also a nice material for closure. Do you use PerfGel?

Thanks in advance.  ■ Ed

I use an envelope flap design for the majority of my cases but 100 percent of the time in the lower incisor region. It’s easier and neater for me to suture later, and in my hands seems to work the best.

As far as GPs doing implants and perio Sx, I’ve got absolutely no problem with that, as long as the patient is in capable hands. I’m all for it and here’s why: I’m a strong believer in the old saying “You only see what you know.” Many specialists are against GPs doing things in their specialty for fear of lost production, protecting their turf, etc. What they don’t realize is that when GPs start taking CE in specialty areas, it is true that they will start doing more procedures like implants or endo, but the payoff is that they will also “see” more and be better at diagnosing cases and referring them as well. It is my experience that my referral sources that do their own implants, etc. end up sending me the tougher, more challenging cases, which is what I like doing any way. To me it’s a win-win for everybody. I would be ecstatic if GPs took an interest in “my” field.

Regarding ortho prior to the CT grafting, it’s kind of a double-edged sword. Yes, ortho treatment would benefit the surgery if we can get the roots within the alveo-
lar housing. But on the other hand, it may not be a good idea to be moving teeth with recession and mucogingival defects. In fact, the first case that I showed is actually done at the request of the orthodontist prior to treatment. However, I could see some instances where ortho could be done first. I would love to hear Danny’s perspective on this as well as any other periodontists out there.


Doctored, I will have to dig up some photos for you. It’s been a long time since I’ve photographed the donor site (it’s not sexy). I can tell you that for the most part, I harvest the graft utilizing two parallel incisions, but occasionally I will place one vertical incision at the distal line angle of the canine. 6-0 chromic gut is a commonly used suture material in my area (Tulsa, Oklahoma). I don’t currently use Perf-Gel, cyanoacrylate, or any other material. I also do not subscribe to using TCN, citric acid, or EDTA either.


Doctored, I forgot to answer your question about closing the palate. I usually place either Gelfoam or Surgicel over the palatal area underneath the flap and close with 5-0 Vicryl. I place interrupted sutures secured to each papilla. Additional ways are to sling the suture around the teeth to place the knot on the buccal side, and I even have a couple of friends who don’t suture at all. They merely place a line of Peri-acryl over the wound closure. I also always use a palatal stent and have the patient wear it during the first week.


Thank you all for the input and great questions. I hope to continue to present cases if people are interested. As far as post-operative pain goes, I have not had but

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patient miss more than one day of work as a result of post-op discomfort. I won’t lie – there are definitely places people would rather be, but for the most part, the benefits outweigh the costs. I think the mental picture of having tissue removed from the roof of the mouth is actually scarier than the act itself. However, for those who are truly fearful, Alloderm (acellular dermal graft) is available for this procedure as well.

What size needle do you use with the 7-0 and with the 5-0? I must say, I know nothing about needles, or how to decide when to use what size/curvature (1/2, 3/4 circle).

A lengthy explanation/lesson would be appreciated. ■ Alex

David these are great results. Judging from the height of the papillae I hypothesize that you have no interproximal bone loss or you have highly scalloped periodontium, what is the case?

In your first case I can see a high frenum attachment which usually gives problem in positioning the flap coronally; I cannot see it at your closure which looks great. How do you address that problem? Do you severe the frenum while doing sharp dissection? Do you ever consider two stage Sx? (Remove frenum and go back later?)

Finally, do you prefer full thickness or split thickness flap for your recipient site prep? Thank you for sharing these cases with us, I am looking forward to your answers. ■ Yiannis

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