Nuts & Bolts Full Arch Case Dissected… Tips, Tricks & Stuff

Townie Michael Melkers shares an active work in progress. This case has a lot of nuances and Melkers offers tips and tricks along the way.

Michael Melkers
Member Since: 09/09/00
Post: 1 of 136

Here is a case I thought I would share. It is a pretty straightforward case but with a lot of little nuances and tips and tricks applications I thought might be interesting to share and discuss.

I *just* prepped this yesterday so it is definitely an active work in progress case.

Here is the patient as I first saw him, post-ortho (yeah…), #7 failing, non-restorable and slated for extraction. Aesthetic desires. I can't for the life of me find the picture before I took the old PFM off.

Fig. 1: Preps yesterday
Fig. 2: Impression
Fig. 3: Temps

I have not been documenting a lot of cases, much less able to do a lot of big cases lately, but this one has some very unique aspects that I had a lot of fun learning with. ■

DEC 1 2011

There's more where this came from!

Lovin' this thread? This is just a sample of the large quantity of posts – the entire thread is already up to more than 130 posts! Search "Nuts & Bolts" on Dentaltown.com to find this message board, read more and contribute your thoughts.

pickingpieces
Member Since: 03/28/11
Post: 2 of 136

Great stuff. Awesome impression. Is it Impregum? And what kind of temps are those? ■

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Michael Melkers
Member Since: 09/09/00
Posts: 3 & 6 of 136

Thanks! The impression material is a Vinyl PolyEther Silicone (VPES) EXA'lence from GC. The main tray material is EXA'lence 370, which is a heavy body. The lighter green is heavy body rigid with a shore hardness exceeding bite registration materials. I use it in implant areas and for quad trays. The yellow is extra light wash. All done one stage.

The provisionals are Luxatemp made intra-orally with a putty wash of the wax-up.

I coat the teeth with glycine and aggressively air thin before seating it in the mouth, which helps with removal. Then when I take it out I tamp it into the putty and let it set for a good five to 10 minutes to minimize distortion or flexure.

The flash tends to be very minimal.

Most is taken off with a scalpel or just by flicking it with a fingernail. The rest is done with discs – I like

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Cosmedent's white and maybe blue. On a case like this, I section the temps into an anterior segment and two posterior segments.

I *prefer* to include the canine with the posterior segment for visualizing occlusion/disclussion and to make the anterior easier to get on and off but in this case the #7 (12) was a pontic. I polished it up with a koala hair bristle brush that Lincoln sent me. He has them made locally from hand harvested hairs from brushing the koalas during a cuddle… either that or I coated it with Palaseal. I forget! Honestly, the temps could have been a lot better but my eyes were fried by the end of this appointment.

[Posted: 12/2/2011]

I am not sure how to go about posting the case – from front to back or a la carte on the cool steps. Evaluating and maintaining vertical opening for reduction. Transferring the existing wear to the wax-up and provisionals with the custom incisal guide. Bite recovery. Just getting to the initial wax-up and such. Any thoughts? ■

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avedental
Member Since: 01/28/11
Post: 7 of 1366

Thank you for sharing. Looking great! May I ask how long it took you to prep and how much anesthetic you used? Block and/or local? Was the patient sedated? And lastly, did the patient not want to have the gingiva of #8 re-contoured? Thanks. ■

DEC 2 2011

Michael Melkers
Member Since: 09/09/00
Posts: 9, 22, 57, 58, 79-81, 109 & 110 of 136

It took me an hour and 15 minutes to do the upper right then a mere five hours and 45 minutes to do the touch ups and the other side.

I am *slow*… dinkodontist, to be sure.

13 preps – cutting off seven crowns I think.

10 build-ups

Upper impression with double cord technique

Facebow

Bite recovery

12-unit provisional

Local anesthetic… two carps lido, two carps septo. No sedation of any kind. All infiltrations, maybe an MSA might have happened.

Gingival levels? Yeah, well-low lip line and this is *post*-ortho. Immediate post-ortho and that is the way the case dropped into my lap. The ortho was done without any restorative coordination or consideration that I was aware of. I think I will start back at the beginning-ish.

[Posted: 12/2/2011]

Going back to the beginning and how the patient more or less presented, here we are…


The patient would like to have the shape and color focused on. Whiter is a big consideration for him. Actually, at the point of this picture, I have actually done some work. He had #7 (12) removed

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for future implant placement so I took the PFM off of #7 (12) and #8 (11) and placed a two-unit provisional, which was transitioned to a cantilever two-unit provisional.

He may come back to the lower but he has been through quite a bit and is ready to get going, and I can work with that. An issue though is that the left picture is not exactly accurate...

We are looking at approximately a three-degree midline cant and about a six-degree incisal-edge cant.

[Posted: 12/13/2011]

It would have been easier if I had both arches to work with or enough tooth structure that I could have equilibrated, but I did not and I needed a start point, and right or wrong, I chose what I chose.

I did because:

- From doing enough asymmetry cases, I have had better luck following the lips.
- For parafunctional control in the dentition, this case was much easier to deal with as far as edges and anterior guidance with the planes and edges matching up. If I corrected the cant on just one arch there would have been a variance in overlap from one side to the other in the anterior.

The patient had but was not compliant with his appliance as much as I would have liked and he reported a lot of daytime grinding and clenching.

It was up to him though and I started where it worked for me and to see if it would be an issue for him. If he asked, and I did point it out, I would have corrected to the above suggestions. From a parafunctional/mechanical standpoint, I am glad I was able to approach it as I did.

[Posted: 12/14/2011]

So… time for this to move forward in the lab, and then off to Eric in his lab.

I may be accused of over-engineering cases but I have seen enough failure and I know that I will see more. I would just like to minimize the volume and frequency as much as possible. So, I have models of the pre-op, the prelim preps of the anterior and the anterior template provisional model, as well as the opposing. They all get mounted with the same bite. They are all mounted in reference from the *first* facebow.

This is one of the most frequent mistakes/ball drops/missed opportunities that I see when people come to me to share cases. They take multiple facebows to mount the different sets. No two facebows are exactly the same on the same patient – there is a fudge factor in them. *If you want all of your mounted models to fit and be compared, you must mount them all off of the reference of the first facebow.*

For this case:

1. Mount the pre-op maxillary cast with the facebow.
2. Mount the mandibular cast with the bite registration.
3. Mount the maxillary prep and provisional cast to the mounted lower with the same bite.

That way they will all be interchangeable. If you mount the three uppers with three different facebows, you will need to mount three different lower casts.

So here you have the three maxillary casts with the same contact point on the lingual slope of #5 (14) and ready for the next step.

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[Posted: 12/17/2011]

So, back to the work-up phase on how we got to where we are right now…

Right now I have the opposing and the upper models of the pre-op, anterior rough preps and provisionals.

The first thing I wanted to do was get a record of the destructive pathways that existed in the pre-op, as much as I could. It was a post-ortho result but if it was all I had to work with, it was at least a start. So, with the mounted pre-op models, I went ahead and made a custom putty matrix.

This case was mounted on a Protar, which has a really nice receiving area for putty to do the incisal guide table as the putty can be removed, saved and reinserted.

The pin is placed on the upper member and the table/reservoir on the lower, and the pin raised a few millimeters so it can indent into the putty but not perf it.

The casts are then moved through all of the excursions, doing our best to reach and match up all of the existing wear patterns.

We can trim back the excess on and be left with a replication of the parfunctionally generated pathways of the existing damage.

If they did it before, they will do it again and this provides invaluable information on how to design anterior disclusion schemes and patterns to minimize future material failure and fracture.

Next, we will take that info and move it to the wax-up.

[Posted: 12/18/2011]

Before I shoot this off to the lab, I need to give some input. The case has ortho off the table so this will be solely approached with restorative.

I wanted to look at opening the vertical for restorative material convenience and to minimize resistance in the anterior in excursions that are decreasing the overlap.

Evaluating with a 2mm reduction loop. Again, these are just the rough preps and build-ups may be modified.

Opened vertical for posterior restorative material convenience.

More to come.

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[Posted: 12/18/2011]

I do not always go to this length in communication, and it will vary with the case particulars, the technician I am working with and what I can see in my head and communicate verbally versus with models and wax.

In this case, with the variables, compromises, resolved pain and interesting restorative aspects, there were a few things that I needed to see on the models:

- Refined incisal edge and midline (the above discussions duly noted)
- Vertical restorative dimension for prep and material needs
- Anterior disclusion scheme/angle

I don't think everyone needs or even should be a lab geek, but it is nice to be able to evaluate and communicate these things when need be.

[Posted: 12/20/2011]

Back to the case and just about ready to prep. One of the challenges with changing vertical and removing existing restorative is that perspective can be lost quite quickly. We can lose sense of where we are in the preps, how much reduction we need and how much build-up material. So, for this case, this is how I worked around that:

First off, I did not have a wax-up over the second molars. We may address them after the rest of the teeth are done… bit of a story.

Anyways, even if I was restoring the second molars, it is a nice advantage to having that space. When I am doing an FMR, even if I don't need to open vertical, I will do ever so slightly to get this space.

I then, bilaterally take a button bite over the unprepped second molars while the wax-up is in occlusion.

This gave us a reference to transfer the planned restorative vertical dimension from the models to the mouth.

[Posted: 12/20/2011]

This is the point that all hell had the possibility of breaking open, and losing perspective. We are planning on opening the vertical and the posterior restorative work is off.

But with the restorative vertical reference bite in place, no worries.

Using a reduction loop, we can start to get an idea of where we need room, where we can add build-up material, and where we need to balance the two.

I also mentally marked a reference – the palatal cusp of the molar – to give me a bit of an idea when adding the build-up material and getting into my initial rough preps. ■

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