Sandwich Technique for Posteriors

Are you doing the Sandwich technique? When do you do it and why? Log on to the message boards of Dentaltown.com today to participate in this discussion and thousands more.

Given the big amalgam battle and composite longevity argument, I was wondering how many are doing sandwich technique. Filling the base of a box with glass ionomer (Fuji IX for me) and then bond and composite from that point. If you do these, when do you choose to do it, why, and what percent of posterior Class IIs are done this way?

If you do a lot, how long have you been at it and do you think it has demonstrably lengthened the life of the restoration? Also, do you adjust your fee? ■

Infrequently, but this week I probably did two. I use Fuji II LC. If I'm not positive that I can get a good bond to really deep dentin/cementum on a caries prone individual, I'll place the Fuji first. Otherwise, I bond it and build it up with composite. Amalgam is a rarity in our office – only when isolation/moisture control is impossible. Just be sure to condition the dentin first prior to placement of the Fuji (either II LC or IX). ■

I did a lot of sandwich at one stage as it is, or was, big in Australia. However, you need to handle the Fuji IX very carefully or it will wash out. Do not think that GICs [glass ionomer cements] are a panacea for poor moisture control unless you want to see a Class II resin with a Fuji IX cave under it. GIC must be kept dry while it sets for a full five minutes. It is better to let it set fully and then cut back the occlusal and bond. If the matrix band is taken off before the five minute set and Fuji coat is not put straight in, you will get wash out. I now only do them for Class IIs where there is a deep extension down for root caries. ■

I have used it often over the last two years. Whenever I have a dentin margin in a Class II, I sandwich. I use Fuji II LC as well, but I make sure to prep retention grooves and undercuts to have mechanical retention. I use a fine-tipped diamond bur to do this under my microscope. When I place the RMGI [resin-modified glass ionomer] (always with my scope), I very carefully tap it into place with a micro-brush (don’t press too hard, makes a mess). Then, with an explorer, I will try to tease a few spikes out of it just to get some mechanical retention with the composite... I don’t know why I do this, really.

When it is set, I use Simplicity to bond the composite into place. I really don’t know how good of a bond you get with Simplicity to RMGI. JK [John K?], are you there?

I also use this technique sometimes in the anterior for Class V restorations on soda-sipping teenagers who have tons of decay. I will have RMGI at the margin when the margin is on dentin. If it is on enamel, I still use composite.
How well does it work? To be honest, so far so good but I want these things to last more than 10 years, not just two. I wish there was some good data out there. Does anyone know of any?

I know deep Class II amalgam restorations can work for decades. We all see it every day. That is the standard that we have to go by. I have seen composites work for a while on these preps, but the long term (20 to 30 years) results are not there yet. I also have seen many composites in these teeth fail, even though they were placed by excellent and meticulous practitioners. I do offer amalgam to patients for these situations but most don’t want it. So the sandwich technique becomes plan B (except in the anterior).

Does anyone use a sandwich technique done with amalgam instead of RMGI?

As long as you get isolation, do as JK does... Surpass, then flowable, then composite. RMGI is not needed.

If you do not have isolation, in the long run anything will fail.

Has anyone heard of or use the "co-cure" technique?

I just heard Geoff Knight discuss this over the weekend. It is essentially "sandwich technique" on steroids.

It is, in a nut shell using 37 percent phosphoric acid for five seconds, in total etch fashion, wash, gently air dry, place GI [glass ionomer], then a thin layer of RMGI, then place your composite on top, and over build it. You then place a plastic strip (Geoff uses 3cm square “freezer”/sandwich bags and has the patient bite on it). You then cure from the buccal (10 seconds), have the patient open, and then cure from the occlusal 40 seconds. It cures the composite and the RMGI, and the exothermic heat created by the composite and the RMGI accelerates the curing of the GI.

Get this; there is no use of a bonding agent! The bond between the GI and the tooth structure is both chemical and mechanically, so bonding agent is not needed.

I know, I’m going to get “stuff” for posting this, but it seems to me that this might be a better method then what we are currently using.

There is of course more to it then this (the use of antimicrobial medicaments, etc), but it sure did “blow me away" with the concept.

Just thought I’d throw this into the discussion, and looking for comments (I know if John K sees this he’ll have some comments). ■

Hey John, have you seen Greg's composite recall thread? If not look that up. On that thread on
the first or second page there is an example of a co-cure composite at six years. You will know which ones, because there is a black line around every margin. Despite the black line, the fillings are still there and asymptomatic.

I think basically what this technique comes down to is your dentin/resin modified GI interface is okay, your etched enamel/composite interface is not okay and won’t seal well. Your resin modified GI to composite interface is basically okay because there is a lot of HEMA in the RMGI.

I don’t mean to knock Geoff because as you have probably seen at his course he has some impressive handles on him with contouring, etc, but I can’t help but notice in most of his newsletters the brown staining and lines around the composite/enamel interface. Pretty much what you may expect with

1. No bonding agent
2. No isolation (biting down on wrap, no dam, etc)
3. Bulk curing

I wouldn’t use it though I have seen these restorations at five to 10 years plus (not mine obviously) still “there” but stained.

[Posted: 1/17/2008]

Oh yeah BTW [by the way]... watch out for patients with Sjogren’s/reflux... the sandwich technique is very susceptible to washout here even with immaculate technique.

Do you have any pictures or studies to show this? I haven’t noticed it but will start looking and considering it. I understand the post about not removing the covering band until full set time but I can’t possibly do that with the technique I use. Beyond that, I don’t see why the material would wash out aggressively in GERD [gastroesophageal reflux disease].

Hi David

I have three OPGs [orthopantomograms] that I could probably post in a month, one with clinical photos. The worst was a patient with an extremely bad case off Sjogren’s. Very dry, had a lot of posterior lesions and she was on tight perio/restorative recalls. I wasn’t the operator on that one, it was a prosthodontist who taught me the technique seven years ago when I was in school (plus he’s a fastidious operator). All the posteriors are mushrooms now (composite contacts okay, GIC washed out from below)!

My GERD assumption was on one of the other OPGs and I really have nothing over than an OPG and the fact you can’t externally seal the glass ionomer interproximally. Really just inferred that the amount of absorption the GICs take up combined with its particulate nature combined with his reflux might have been a factor but that’s all I had to go on for that case. I did that one.

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