

**Dr. Paul Belzycki - View from the Chairside - The Devil is in the Details!**

Chiraz: Hello and welcome to CDA Oasis. My name is Chiraz Guessaier and today I have the pleasure of welcoming our regular contributor to Oasis Dr. Paul Belzycki. For our viewers who join us for the first time, Dr. Belzycki is a general dentist practicing in Toronto. He shares regularly with his colleagues 4 decades of clinical experience, demonstrating time-tested techniques to achieve optimal treatment outcomes. Today, Dr. Belzycki and I have decided to change the format of the clinical presentations and we are going to do things a little bit differently. We're going to have an informal conversation about this interesting case rather than Dr. Belzycki presenting everything on a PowerPoint. So, and also this is a fairly lengthy clinical case so we will continue the conversation in a subsequent episode. So, with no further ado, Dr. Paul Belzycki, thank you very much for taking the time to speak with me today, present this clinical case and welcome to Oasis.

Dr. Belzycki: Thank you very much. Nice to be here.

Chiraz: So, before we go in and see the case, can you as usual, tell our audience what are the main themes or the key messages that they can take away with them?

Dr. Belzycki: Well, those of you that have been following, I usually make a statement that I try to integrate endo, perio and restorative dentistry to deliver long-lasting restorations because I think that's what I would want. And I think that's what my patients want. So, this is just a case where a patient came in and there were just a lot of issues and trying to tease out all of those issues and handle the case effectively so she would have a stable occlusion for pretty much most of her life. And that's my role as a dentist. That's how I see my role.

Chiraz: So, let's go and see the case and while we do that, can you tell us how did she present to you? What was she complaining about?

Dr. Belzycki: Okay, let's go to that case and we'll start that discussion. So, this patient called, a female in her fifties and she claimed that she has ongoing issues with discomfort, generalized discomfort coming from just about everywhere and multiple breaking teeth over the past few years. And she's been seeing a dentist, several dentists, one of which is a relative and she just has a profound fear of teeth continuing to break and having no teeth when she gets older. So typically, when I hear a story like this, I want a lot of time set aside. So, for the first appointment, I'll book about an hour, knowing that there'll probably be a lot to talk about. So here you can see she has a full complement of teeth. There is a little bit of crossbite here. Yes, it's not a perfect lined up ideal occlusion, but she has no TMJ problems.

Dr. Belzycki: She can open, she can close. There's no clicking, there's no popping, no joint noises. It's just my teeth. My teeth are cracking and breaking, and pain just seems to go from area to area. So, my normal course of action is to listen to them, look at them. I don't really write too much down as they're talking to me. I try to maintain eye contact with them and then I say, fine, let me just take a look and let me do my thing. I've got to take

pictures and radiographs and we'll try to sort things out and here are just some of the intraoral photographs that I customarily take. So, I can see, thankfully she has some good solid amalgams, but she's got a heavy bite. There's a crack line here, another small crack there and just zooming in you can see those sorts of things. This is the upper left side. There's a crown here. This is just a very small crown for 25.

Dr. Belzycki: And just taking these photographs, it helps me get a sense of what's going on. And this is also excellent for record keeping. So, third quadrant, lower arch, I can see an amalgam restoration, I guess a cusp had broken, so there's a composite resin here. This is all resin material and as I've often said, it's very difficult to get contacts in composite resin and I guess the dentist that did this found that out as well. And then parked an amalgam at the distal trying to get some contact. So yeah, there's been a lot of breakage of cuspal structures and that again, third quadrant you can see composite resin and just teeth that are breaking down. In the fourth quadrant, this little bit of white here is just chewing gum. It's not a temporary restoration, it's just some chewing gum that was lodged there.

Dr. Belzycki: So, I take these photographs and I go to the back office, I've taken my radiographs there, I shoot film, so they are being developed and they'll come to me. So, I digitize all of these things and get it ready in the back office, not in front of the patient. I go through all of this and I try to think out what are all the problems and there are many; and how do I address these understanding that the patient isn't wealthy not made out of money but there's a lot of teeth that have to be managed and try to develop in my mind what I'm going to say before I say it. So here are the radiographs and you can see, yes there's, the restorations aren't shallow, they're not particularly deep either in the first quadrant. This one is a bit of a concern that's approaching the pulp chamber. Some sort of composite resin plug here on the facial. The perio thankfully is good, roots are long, so I know well if I've got good bone support then this just comes down to the mechanics of occlusion trying to develop restorations that have to function in a harsh environment in a person that probably has some clenching and bruxing going on.

Dr. Belzycki: So here you can see the second quadrant and her complaints of discomfort on presentation were in the second quadrant and she wasn't sure was it the upper arch was at the lower arch. It flip-flops, so I can see some possible candidates. One of them is the 25. There's a composite resin here close to the pulp chamber. And then looking on my bitewing, I can see here there's probably some decay.

Dr. Belzycki: So, the periapical. So, I, I draw this in front of the patient, and I save it just, it reminds me of what I talked to them about. So, I told them, look, you've got a composite resin here and it's close to the pulp chamber and this tooth has a bit of a bend to it. So that's a bit of a concern. There's a little bit of bone loss here. This is a deep restoration. And coming to the lower arch, well there's some problems here too. So again, as I said, I digitize these films, I have the photographs, this takes me a while and then I'm presenting this to you as I presented it to the patient, I'm just running through the scenario of what I see and what I think [inaudible]. So, I draw this out for her, and I said, look, we've got some decay in this area. The skin is all bunched up, so this is an area

where food gets trapped. There's a little bit of a bony anomaly here, which may cause that skin to bunch up.

Dr. Belzycki: I see a bit of a radiographic evidence for some chronic irritation or acute irritation that's occurred here. And in all likelihood, this tooth is the offending tooth. It could be one of the upper teeth, could be one of the lower teeth. But for sure I have to work on this tooth because of the presence of decay.

Dr. Belzycki: So, I said, I think what we should do is start going to work on this tooth. That's what we should start with and just knock each problem off one at a time. And typically, they'll say, well, what has to be done? So, taking so many photographs, I'll say, well look, here's a similar case. Let me walk you through what you have to have done, because this is important in the new era of informed consent. And she has to have a lot of work done. And, the best way I find to explain this to a patient, it's just to show them using words like endo or periodontal surgery, they don't have a clue. So, I try to show them you're in for a lot of work with me and I never want anybody to say, well, you didn't tell me had I have known. So, I tell them look, I'm going to show you how I've addressed these two teeth. You're going to see blood, you can look away if you want, but I'm going to show you what perio is, so you know. So, I've taken, [inaudible] restore these two teeth, I've taken the failing restorations out, the endo was done, and I explained that to her. Now I have to restore these two teeth so I am putting in retentive pins, raising a flap to do periodontal surgery, doing a core buildup. This is what a core buildup is, pin-retained core buildup, trim that down. And I have to develop good solid crown preparations to accept crowns that will last a lifetime. And in order for me to do that, I have to have vision, good vision of the margins and develop good crown prep design. Here we're making provisional crowns. These are temporary crowns. You have to pay for these. You're going to wear these for two or three months while the skin heals. So just going along and I show her, look after a few months the tissue, there is, there will be a happy ending. The tissue comes back. Nice, pink, healthy. I can see my crown margins. This is what I mean by a crown prep where you have slightly converging axial walls for good retentive form and resistance form to dislodgement. And then we'll go ahead and take a very accurate impression, send that off to the laboratory. These are porcelain fused-to-metal crowns; and they'll be inserted, and I know with confidence that these will last, last you most of your life. And typically, they'll go on to ask me, well how do you know? And again this, I showed her, this is in an occlusion where there were issues with a heavy bike and a crossbite similar to hers and again, how long will it last?

Chiraz: So, Dr. Belzycki, I remember very well every time we do one of these cases you speak about having a vision. Once you do your examination, you ask the patient what their complaint is, you look at your pictures, the radiographs, and then use you think about how you're going to treat a case or this patient. In this case, what was going on in your mind and what was your vision for the treatment that you would undergo or do?

Dr. Belzycki: Having the benefit of decades of practice, I've seen everything there is to offer, everything there is to doing dentistry. So I see this case and my vision is a case that I did in 1982-83 when I started, and I've shown this before, this is a case of a young female

that came to me when we were both very young in 1983, she was from Quebec, no fluoride in the water, a family of 16. There was no time or money for dentistry; when she came to me, she had a mouthful of amalgams and some of them were breaking down and she happened to have a sore tooth. So, I told her at the time, look, we will do, we'll address a one tooth at a time, and we'll pick the tooth that's bothering you. You'll probably need endo, we'll do a buildup and we'll do a crown.

Dr. Belzycki: And this case was, this is the years that I did them 84, 84, 92. You folks can read every bit as well as I can. The front segment was done, this one in 1989 and it was done as I said, as symptoms dictated when she came in and say, now this tooth hurts, okay, we addressed it. So, a vision, I mean when I look at this, some of these crowns are over 30 years old and they're holding up quite nicely. I had to do endo to one of those and here you can see the lower arch and these amalgams are probably ones that she came in with back in the 80s. So, I don't go replacing restorations just because they don't look nice. There has to be a functional decay problem. So, doing my endos and as I said, I've done all the endos, I do all the perio and so what's my track record? So, I show her these and to give confidence to say look here's restorations and root canals I did in the 80s, 84, I put the crown in 86, you can read as well as you can for yourself.

Dr. Belzycki: And I tell her, and I'd like to tell the audience, getting restorations to fit, dentistry is just detailed, minute details running after details. And if I can do my part and make proper crown preparations, get a good lab to machine these metal margins porcelain fused to metal, 86 to 2004, I think that's about the last crown I did for her, I mean if there's a lot of fit and finish that goes on in order to have confidence that here are restorations I've done and I hope that they last you a lifetime.

Chiraz: So, basically what you were telling her is we're not going to do this in one shot because it's unrealistic, but we're going to treat as symptoms arise.

Dr. Belzycki: Correct. And sometimes those symptoms can present themselves rapidly and sometimes they can take a decade or two. But the vision. When I look at this and like each one, they look like they were done at the same time because I was the one that did them, I had the same lab that worked with me for 25 years. So, there's a certain uniformity to, shall I say, the exactness of treatment and the crowns that were placed. So, I feel comfortable in moving forward and saying with confidence I can help you.

Dr. Belzycki: So, we shall we continue then?

Chiraz: Yes. Yeah. Walk us through the treatment then.

Dr. Belzycki: Okay, so I probably blew some cold air and she probably jumped, I can't recall, but we did start working on tooth 37 because of the decay. I had to work on that tooth anyways. So again, that's what it looked like: decay at the distal, you've seen that before. So, I start doing the endos and I've often said if you're not taking photographs, take photographs because it's a good way to manage a patient and for record keeping because it lets you know if you have a problem later on, what did that tooth look like

when you did the endo? And here I can see cracks running. This is from buccal to lingual rather than from mesial to distal, which is common. So, she had a crack there. So, I did my endo. That was one large canal and did the endo, filled the tooth with some composite resin. This was done over two appointments.

Dr. Belzycki: And then she presented, and I got rid of the discomfort and then she presented again as something's feeling a little bit funny. So, I started taking apart the 36 and you can see that's what it looked like before. Started taking the composite resin away. And typically, this is why I don't like composite resin on back teeth where there's a heavy bite. It just, I know that there's a good chance I'll bump into decay, just seems to promote decay. I didn't see it on the film, but it was their intraorally, and here I popped into the pulp chamber, so I've got to do another endo. So here you can see preoperatively I didn't see all that decay. I thought I could just trim this down, prepare these two teeth for crowns and I'd be off and running, but I popped into another root canal. So, taking away all of the diseased tooth structure. I did the endo and rebuilt these two teeth with amalgam core buildups and did some perio to clean up the soft tissue. And this was June oh sorry, January 2014.

Dr. Belzycki: And she came back, she healed about a month or so later. And you can see now those two teeth have suddenly gone from teeth that look like disasters to good solid tooth preparations to accept crowns. And in this case, I'm putting in splinted crowns because on endodontically treated teeth, splinted crowns as far as I'm concerned, are the way to go if I'm doing two at the same time because then the forces of occlusion are distributed over two teeth and will help guard against the propagation of some of these root fractures that she has. So, I always take an impression full arch, even if it's for one crown, a full large custom tray with VPS impression material. And there you can see the outline of the margins. Everything's clean. I often will come in after the impression is taken and just add some light body on the end of a probe. Just so that when it's poured up, the stone is kept away from the margin. So, there's no chance of trying, or it reduces the chance of the lab tech nicking of margin while he's trying to expose or remove some of the excess dough. The temporary crowns were inserted and there was some decay here under another composite resin. So that was addressed at the same time. So yes, I do use composite resin, but in areas that aren't high stress.

Dr. Belzycki: When I'm doing splinted crowns, I always get the metal frameworks back, the copings back in segments. I want to try each one in separately because if my fingers want to feel each coping on the tooth to make sure there's no rocking, it goes to place, it doesn't jiggle wiggle and there's a little bit of, when I pull it off, there's a little bit of tug back, then I know that will be a tight fit. And if I get everything back finished, I can't tell if that's the case. So, they're put in the mouth and intraoral solder indexing is done. I had to reduce a little bit of structure there. I guess I didn't reduce enough. So, I get a reducing coping and the crowns come back completed, fused together. Then there you can see the fit and finish. I make sure that there's good embrasure space here. So those are contoured so that once it's inserted, the patient can clean quite easily in between the teeth just using an interproximal brush.

- Dr. Belzycki: So, this is the care and dedication that I go through to deliver as I say, long-lasting restorations. These are the provisionals. And you can see here on the day of insertion, the tissue is pink and perfect. It doesn't bleed, it doesn't weep, and it makes [the] cementing appointment a lot less stressful, easy. You don't have to insert cord, you don't have to manage bleeding tissue. You don't have to give local all over again. And I cement these crowns in with my old favorite Polycarboxylate cement, the one called PolyF Plus. And again, tissue distal to the 37. I've been able to ramp this area out the soft tissue, so everything's exposed. I'm not fighting blood or diseased skin, I know that not only have I fixed it, but it will remain fixed. There's no food trap now to accumulate debris which can cause recurrent decay and the crowns are cemented in. And you folks that are into cosmetics and all the rest of it, you can argue whether this is the right shade or not. I don't particularly care. I would have made full gold crowns had she have let me, but we picked a nice light shade. I always like a fine metal margin because in my mind that will result in the best seal that I can manage. So, there are those two teeth completed and that was done in March 2014. Any questions?
- Chiraz: No, not at this point.
- Dr. Belzycki: So, I did manage this area and you can see the margins are just radiographically tight and clean. She came back few months later: well not all the discomfort has gone and now I think it's the upper arch. So, before she was probably having intermittent problems from the upper arch and the lower arch. As I said, I addressed the lower arch because there was decay, I had to work there, the upper wouldn't wait. So, on testing I determined that it was the 26. So endodontic therapy was carried out. And I still do my endos with hand instrumentation only. I just feel comfortable doing that. There's always a fear in my mind of separating an instrument in a canal with rotary. This is just always how I've done it. I have wonderful results, very few problems. Endo is about the last problem I have; all the problems that can come up in the course of a case, rarely is endo an issue. So, I do it with hand instrumentation, so I don't want to strip canals, zip canals. So, I just find doing it by hand, I've developed that tactile feel, that I can feel the apex when I'm approaching, getting this just from years of practice. So, I did the 26 as you can see. And then again taking photographs. I saw that there was a hairline crack running through here.
- Dr. Belzycki: I didn't think it ran through the floor of the chamber. So, there I've highlighted it and I thought, well the best way for me to manage this because I didn't know how fast and we're going to move on crowns in the upper arch and there's no way I'm going to put a composite resin here. There's no way I can control moisture. So, an amalgam is being put in, I thought it would be neat. Let me drive a pin in the buccal and in the lingual and then when I put my amalgam in, it will hopefully grab onto these two pins. So, there you can see doing that, I developed a nice amalgam restoration. She's paid me a considerable amount of money for the lower arch, let's try to put off crowns on the upper arch.
- Dr. Belzycki: So that was a few months later and then she presented, now in January 2015. I still pain again to cold, hot and cold. So, I figured, well it had to be that tooth, the initial one that I

saw where the composite resin was close to the pulp chamber and it was just an odd shaped tooth. So here I again, I've done the endo for that tooth and I thought let me get some temporary crowns on these two teeth because trying to restore this would be problematic as far as I was concerned. So, I took the model, I used some blue blackout material to change the anatomy of that crown. And how I make my temporaries is we suck an acetate sheet over the model, and this is a particular material that will not adhere to methyl methacrylate tooth-colored acrylic, which is the material I use. I don't use a composite resin temporary material. I really love methyl methacrylate because that material adds to itself an infinite number of times. When I do large cases where perio is involved, I always have to modify, add and subtract from the contours and methyl methacrylate allows me to add to the existing provisionals I have so I don't have to remake them anew each time. So, I've prepared these two teeth as you can see. And when I splint them together with the provisionals, I know that they won't dislodge over time.

Dr. Belzycki: So here I've done that, yes, I have to beat up the skin a little bit with the rotary instrument, but I knew that I would end up doing perio surgery here at some point in the future. So that was accomplished in early 2015.

Dr. Belzycki: And there, you can see nice accurate fitting margins because you need that after I beat up the skin, I need accurate fitting margins to ensure that the tissue heals in a healthy manner. And then later on in the year, May 2015 we decided to move forward and address this area in a restorative fashion. So, I took the crown off 27 and I could tell that there was a problem here because there was an amalgam patch, I'll just go back. There was an amount of patch here that was put in after the crown was inserted. And so, I could tell this crown have to be redone. So, I removed that and that's a composite resin core. There was also decay present in this area. And again, this is why I don't like composite resin as a core material. If there's leakage, it tends to promote decay.

Dr. Belzycki: Amalgam doesn't do that. The breakdown products of resin, the ester bond, the by-products that are released are chemotactic for bacteria and make them more virulent in terms of their acid production. And, there's a paper that was done on that by Yoav Finer some years ago. So again, I've got to go chasing decay, now at this point I didn't know if I could hang onto this tooth and I told the patient that: there's significant decay here. I'll take the tooth apart. I got to get rid the decay. I've got get on to solid tooth structure. So, I'm going to do perio and hopefully I can do some crown lengthening, take some bone away and save the tooth. Because if I have to take this tooth out, I've to raise a flap anyways and take far more bone away. So, let me raise a flap and then see if I can dust a little bit of bone away, recontour the bone to establish a good solid margin.

Dr. Belzycki: And just different views. It's hard to get a photograph of this. It's not that great. But you can see there's a lesion there. I'm starting to clean it up, get some of the granulation tissue away. Now somebody put a composite resin in this area, and for the life of me, I don't know how they expected to place a composite resin because from what I can remember, composite resin doesn't like moisture and I have no clue how you can put a composite resin core under tissue where moisture management is a problem. Isolation

is a problem like this thing had to fail before you started. If you don't have amalgam in your office and you're going with the composite resin in a difficult area such as this, you failed before you started, it just takes time to fail. And here, like this crown is not that old, so I've color corrected it here a little bit, but you can see there's tooth structure and there's decay going on. And I did note the furcation of this tooth.

Dr. Belzycki: So, I just kept on going. Again, this composite resin was sub-gingival. I don't know how anybody could get moisture control here to put in a restoration that's a composite resin. So, I started taking the resin apart. I started taking some bone away and I was able to start to develop a crown margin and I just kept going and then I left the resin. I made the decision, which came back to bite me later on, which I'll show you, but once I got rid of most of the resin, the post looked solid, I was able to get a margin. I thought I'll do my amalgam core buildup because with moisture amalgam doesn't care, it'll set under water. So, I've carved it by hand because you can't use a rotary instrument to do this. You'll pulverize the amalgam, force it under the flap, you'll never get rid of it and end up with an amalgam tattoo. So, this is all carved by hand because you can then use the high-volume suction to remove excess amalgam, the large chunks that you've carved away. And a month or two later, and all I did was add another crown, another temporary crown onto the existing two unit-splint that I had originally.