Interview Transcript – Dr. Neena D’Sousa

John: Today I’m speaking with Dr Neena D’Sousa, Prosthodontist based in Mississauga, ON. She and I spoke recently about the longevity of different types of fixed partial dentures. We did a quick literature review when we discussed it together. The conversation turns to resin-bonded bridges, and I asked her what role does the resin-bonded bridge play in our practice. And, Neena what was your answer?

Neena: Thank you John. It’s a pleasure to be here with you today and sharing my point of view with you and your audience. So yes, I had originally reached out to you to assist me in some literature searches to apply evidence-based models to the answers we provide our patients on longevity and prognosis of fixed prosthesis. And then the conversation turned to resin-bonded bridges in which we discussed that surprisingly they are often under utilized because of the misconception that they do debond frequently. When he did a literature search, we found that they actually have an excellent prognosis, if done appropriately in these specific situations, they have an excellent long-term prognosis. So, elaborating on that, I would say that resin-bonded bridges when used in the right situation and following the right technique have an excellent prognosis. They can be used as long-term temporaries in young adults who are not yet ready for implant replacement to keep their teeth or they can used as permanent fixtures in adult patients who might want a more conservative form of treatment. And to demonstrate, I’d like to show you a case that we treated in our office.

John: Let’s go have a look at your case now.

Neena: We have a 38-year old woman who presented to our office very unhappy with the aesthetics of her smile. Specifically, she was unhappy with the irregularity in the spaces between the maxillary incisors as well as the irregular spaces, the slanted teeth, between the mandibular incisors as well as the size and shape of a prosthetic on 4.2. Now, 4.2 is actually a mini implant that is well integrated and has been restored by a cemented crown outside Canada. So, if we take a close look at the dentition, the occlusal view demonstrates the emergence profile of the 4.2. You can see that there’s not much attention paid to the detail in the placement or restoration: 4.2 has a very large cantilever crown. The space in between the teeth is very irregular. The mid-lines do not coincide, and the low incisors are slanted. Natural views demonstrate that she has a crossbite between the 1.3 and the 4.3, as well as considerable spacing on the left side. So, quite a few things to address in her case.

Neena: And, our office being a multidisciplinary practice, we sought the opinion of the orthodontist as well as the periodontist in determining reasonable treatment options for her. So, the first option we presented to her was addressing her aesthetic needs. This would be done with or without orthodontics. And then a second priority was the replacement of the 4.2. So, with regards to the 4.2, we have a number of options, either removing the implant and replacing it, or ignoring the implant and just replacing the 4.2 with conventional prosthodontics. Having discussed the timing of the treatment, the length, the risks, complications, and disadvantages, she elected to go with orthodontics.
So, we made orthodontic records and treatment was undertaken with Invisalign and just prior to the time the Invisalign retainers were inserted, we removed the crown on 4.2.

Neena: And you can see here again, as I mentioned previously, the attention to detail in placing this implant. The implant and abutment is one unit which kind of precludes the future replacement of 4.2 effectively. So, we undertook the orthodontics; the treatment lasted about nine months and at the end of the treatment she has a temporary retainer that was bonded into place, to buy us some time to discuss the replacement of the 4.2. So, having looked at the implant and obtained the periodontist’s opinion, the implant as you can see is well integrated and there will actually be significant risk involved in removing it. So, having discussed that as well, the patient has already undergone nine months of orthodontics, to remove this implant and replace it, it would be close to another six to nine months.

Neena: So, alternative options were discussed, and this now included either a removable or fixed prosthesis. And since a fixed prosthesis was the only option, there was choice between resin-bonded bridges or conventional fixed partial dentures. So, in a situation like this, obviously the patient is concerned about longevity and survival and what the prognosis will be. So, we did a literature review on resin-bonded bridges and as, as we found that resin-bonded bridges have an excellent prognosis. Several studies have looked at the types of bridges that have been done over a number of years and these are the studies that we came across; and I finally found this study, which was a systematic review on the survival and complication rates of resin-bonded bridges after an observation period of five years.

Neena: Here they actually did a Meta analysis on 29 studies looking at 2,300 resin-bonded bridges. And the survival rate of the conventional resin-bonded bridge was 91.4% with a confidence interval of 95 percent, which is extremely high. And over 10 years, that then drops to 82.9%. Now we know that conventional three-unit fixed prosthesis also has a very high survival rate, but the advantages of the resin-bonded bridge over the conventional three-unit fixed prosthesis is that the problems associated with the loss of abutment in a three-unit bridge due to caries or non-vitality is virtually nonexistent with the resin-bonded bridge. The primary concern with the resin-bonded bridges is debonding. However, with the use of zirconia frameworks, the aesthetics of these bridges is extremely high, their preparation is almost minimal; so, they preserve the abutments over a very long period of time and they will not be subject to conventional problems like decay or non-vitality.

Neena: The most common complication they observed with zirconia bridges over the five-year period has been the debonding or chipping of the veneering material. So, having discussed this at considerable length, and knowing that in the anterior mandible a resin-bonded bridge has a very high survival rate, the patient elected to have a resin-bonded bridge. This is a view of the occlusion post orthodontics, and you can see we were actually able to achieve a really great result. The teeth were moved over so that the
space we'll be able to afford for the 4.2 is now symmetrical to the 3.2. You can see that the crossbite has been corrected and the mid-lines almost line up.

Neena: These are orthodontic records following the treatment and what we did was to section the implant at the level of the gingiva and allow it to grow over; and it's now well integrated. This is where we fabricate the resin-bonded bridge: we fabricated a milled Zirconia framework, preparing the lingual surfaces of the 4.2 and 4.3 with small interproximal grooves to enhance retention. This Zirconia framework was milled out of Ivoclar material and then etched with fluoride compounds. We then tried it in and cemented it with a resin cement. These slides demonstrate the final results where we show a comparison of the 4.2 on both sides. Some critics might say it's still wide, but within the limitations of what we were presented with, I think the result has been quite outstanding. So, here we have a view of the occlusion from the lateral side, the well-aligned arches, and orthodontics. And that's her smile. Here's a comparison of the before and after and what we've achieved. So, basically the patient's aesthetic needs or aesthetic concerns were well addressed, the spacing was closed completely, the slanted teeth were up-righted, and 4.2 was effectively replaced in a very conservative manner.

John: So, all in all, was the patient happy?

Neena: We just completed this case about six months ago and yes, the patient is extremely happy, and I think that would be further demonstrated over a period of time when the result continues to be maintained. And always advise patients that with orthodontics or prosthetic work, regular follow-up is critical to maintain the results.

John: Are there any concerns about leaving that implant in there?

Neena: I think with our regular follow ups, you would take x rays to determine how that is doing. The implant was in for about three to five years and there was no osseointegration that was observed. So, it may have crossed that critical period where it might demonstrate some bone loss; and if it does, then we would have to find ways to address that.

John: Dr. Neena D’Sousa, thank you very much for sharing this case with us, and if anybody wants to ask any follow-up questions, are you open to coming back and answering those questions?

Neena: I'd be very happy to do that. If anyone would like to reach out to me with questions, I've also included my email address in this presentation.