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By Nobel Biocare

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Dr Pozzi, you have been placing implants for more than 20 years. What sparked your interest in dynamic navigated surgery with the X-Guide system?

I have been placing implants using surgical templates since I entered dentistry back in the 1990s and always thought it was the perfect way to perform guided surgery. Four years ago, I discovered the X-Nav system through Prof. Peter Moy from the University of California, Los Angeles. I was quite sceptical at first, but as a clinical researcher, I immediately tried to challenge the system and compared it with static guided surgery in order to find out about the advantages and limits of each approach.

Using a surgical template is a very static concept, which means that what we plan with the software cannot be changed or modified thereafter to fit in with the outcome of the surgery or the need to establish better primary stability for immediate function. With the implant planning and dynamically navigated surgery empowered by DTX Studio Implant, we now have a very flexible system at our disposal that allows us to adapt our treatment plan in real time and provide quick, safe and predictable treatment outcomes, even in challenging cases or emergencies.

What are the main advantages of dynamic guided surgery with X-Guide compared with static guided surgery?

The main advantage is having full control of the surgery. When placing an implant immediately in a fresh extraction socket, for example, it can be difficult to previsualise the anatomy of the recipient site in the software or to be fully confident that the buccal plate has been maintained after the extraction. I cannot remember the number of times during the last 15 years that I was not perfectly sure about the level of the buccal plate because it was hidden by the metal artefacts of a porcelain-fused-to-metal crown or post or it had, indeed, been disrupted during the extraction.

With X-Guide you can deliver guided surgery with an open surgical field, since there is no template obstructing the view. We can see and immediately adapt to unexpected complications, for example when the alveolar wall or a knife-edge shaped edentulous bone crest drives the drill into the wrong position. With a template you can never visualise those events, as it would need to be removed to enable you to see. With the dynamic navigated concept, we can see what is happening in real time and can immediately adapt our plan to overcome complications.
What are the clinical indications for X-Guide?
There are still some clinical scenarios where the use of templates has advantages. However, with the continuous use of X-Guide, I have found more and more indications becoming possible to treat. Over the last three years, I have been treating single-tooth, partial, full-arch and terminal dentition cases with the navigation system. Performing the last with a template, in particular, can be tricky, as you need to keep the strategic teeth that can support the template and this sometimes is unrealistic and can affect the proper prosthetically driven implant positioning. With dynamic navigated surgery, you don’t need this: you can position the implants exactly where the ideal prosthetic outcome demands.

Looking back at your positive experience with the system so far, what role do you think dynamic navigated surgery will have in the future?
I have performed guided surgery for more than 15 years, but the dynamic navigation concept has completely changed how I approach my work. Almost 70 per cent of the cases in my practices are now performed with the help of the X-Guide system. I think that is amazing! My patients can be treated on the same day without the delay of surgical template production.

With this technology, we can really meet patient expectations in terms of reliability and effectiveness. I believe that, in a few years, we won’t be talking about freehand, static or dynamic guided surgery anymore because dynamically guided surgery will be standard practice. With surgical templates, we often had to make compromises in the past, but now the surgeon is in full control of his or her procedure. The good thing is that we are still following the proven concepts we learnt from Prof. Per-Ingvar Brånemark and other implant pioneers from the last 50–60 years.

X-Guide can be a system for everyone, beginners, as well as experienced clinicians, who wants to challenge themselves to take on more demanding cases with confidence.

What recommendations would you give anyone starting with the X-Guide system?
For beginners, it can be a good tool for helping them increase their confidence when they start their careers as surgeons. Especially for clinicians who do not have much surgical experience, X-Guide can be a way to improve the safety and predictability of their treatment. You have to remember, however, that it is not a shortcut, and you still need to be knowledgeable in the basics of implant surgery.

Using a template is fine, but it always detaches you somewhat from clinical reality. X-Guide is basically like a GPS, which matches the virtual patient with the real patient and looks over your shoulder in order to guide you through the procedure.

In the last couple of months, I have been training people from all over the world on treatment with X-Guide, and it is amazing to see how quickly they are able to overcome the learning curve and improve their clinical performance. In my experience, it usually takes them less than ten procedures to switch from performing simple cases on a model to a real patient.

Thank you very much for this interview.