Common posterior-region challenges

Nobel Biocare brings innovative technology to the posterior region

By Michael Stuart

Restoring single molars is a common indication for most clinicians placing implants, but that doesn’t mean it’s straightforward. Here we look at how to overcome four challenges frequently encountered in the posterior region.

If you’re taking an immediate placement approach, then large molar extraction sockets can make it difficult to achieve sufficient stability.

Large molar sites

The need for a large molar crown means that additional considerations have to be taken when it comes to the emergence profile. Restorations that are significantly wider than the implant platform could, at best, leave space where food can become trapped. At worst, they could be detrimental to the marginal bone. In both eventualities, you may have patients coming back with complaints.

To try to help avoid these issues, you can use wide-platform implants, such as those found in the NobelActive and NobelParallel Conical Connection systems. You can also further improve the emergence profile by using healing and temporary abutments designed specifically for the molar region.

Limited accessibility

The reduced space and light in the posterior region can make placing the restoration tricky. And working at the back of the mouth means there’s a high risk of the patient aspirating any small components that can come loose.

Improve accessibility by selecting an abutment with an angulated screw channel. Being able to position the screw access hole towards the lingual or mesial aspects makes it easier to reach. The right tooling can also improve handling. Nobel Biocare’s unique Omnigrip Screwdriver is designed for a strong grip on the screw to limit the chances of it detaching in the patient’s mouth. This offers a little extra peace of mind, particularly when you’re working in the posterior.

Excess cement

Case studies have indicated that excess cement can have a detrimental effect on peri-implant tissue health. Despite the risks, a survey of 400 dentists by Wadhwan and Piñeyro (Int J Oral Maxillofacial Implants 2012) found that some place up to twenty times more cement than they need. An overload of this scale means that up to 95% of the cement that’s placed extrudes at the restorative margin. With the restorative margin often below the gumline, this can pose real problems, particularly in the molar region, where accessibility and visibility make removal of cement especially difficult.

You can avoid this issue entirely by using a screw-retained restoration like the NobelProcera FCZ (full-contour zirconia) Implant Crown. As even the adapter is mechanically retained, the restoration is completely cement-free.

Alternatively, Wadhwan and Piñeyro suggest a technique for minimizing excess cement by creating a chairside copy abutment that serves as a controlled applicator for the cement.

High occlusal forces

If your restorations are going to withstand the high occlusal forces experienced at molar teeth, they need to be strong. Those created specifically for the posterior region, like the NobelProcera FCZ Implant Crown, are designed to handle these demanding conditions in the long term.

High forces can also lead to veneer chipping. As the NobelProcera FCZ Implant Crown is a monolithic full-contour option, it overcomes this challenge too, as no veneering is required.

Four problems, one complete solution

To overcome all these challenges, we’re bringing innovation back to the posterior region. Our new complete posterior solution combines wide-platform NobelActive and NobelParallel CC implants with anatomically shaped PEEK Temporary and Healing Abutments.

Then, for the final restoration there’s the high-strength, cement-free FCZ Implant Crown with the option for an angulated screw channel. In combination, these innovations are designed to make your life easier when restoring molar teeth.

Full references for this article are available online at: nobelbiocare.com/news.

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The Omnigrip Screwdriver is designed for a strong grip on the screw in order to limit the risk of it detaching in the patient’s mouth. (See also cover image.)

The NobelProcera FCZ Implant Crown combines full-contour strength with restorative flexibility, whichever of the eight shades you choose.
DentalSuite 5 is a complete and open solution that covers the entire 3-D scanning, design and modelling workflow in an integrated and functional way. It is composed by DScan, 3-D scanner that combines performance, reliability and accuracy (up to 15 microns), and the proprietary software DentalCad. DScan, the latest generation of scanners with a structured blue LED light technology for the 3-D acquisition of dental models, multilayers, impressions and verticulator. It is supplied with a special plate that enables optics and axes calibration in automatic in just 5 minutes. Thanks to its high quality mechanical and electronic components, DScan allows a faster and more accurate scanning ensuring accuracy and reliability.

On the software side, DentalCAD, EGS' software for dental modelling, has been designed to be ideal for both first users and experienced users. Thanks to the new interface, it is easy to use and it features a number of automatic tools that can suggest optimal parameters to guide the user through the modelling. It presents a lifetime license with a complete functional coverage (crowns, implants, veneers, wax-up, attachments, toronto bridge, inlay-onlay etc.).

Moreover it features:
- Automatic updates (free for 1 year and optional starting from the 2nd one) to ensure the product best performance;
- Bars for edentulous patients: thanks to the new function it will be possible to realise bars with different attachment libraries managed by a new and more performing algorithm;
- Implants with gum: it allows the implant acquisition directly on the gum using the margin line also as functional reference;
- Locators scanning with a simple and automatic managing tool throughout the order manager;
- Direct integration with Digital Smile System (DSS) software allows to import the rehabilitation project in a CAD environment and to realise the mock-up in order to use it as reference for the final project realisation. This feature’s advantages are clear not only for dentists and dental technicians, who gets a fluid workflow which keeps steady the patient’s expected result, but also for patients themselves who get preview about the final aesthetic outcome;
- Abutment management: it is now possible to realise the abutment lower part in a fast and simple way avoiding the margin line process.

Efficient and with a recognisable interface, DentalCAD 5 has got a renewed look: modern and charming and it also allows users to manage external CAM systems.

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There are moments in life when you want a connection to be extremely reliable. So far hybrid denture attachment systems may have been facing their limits in challenging implant situations. Now, there’s the Straumann Novaloc Retentive System.

The Straumann Novaloc Retentive System for hybrid dentures offers an innovative carbon-based abutment coating (ADLC, amorphous diamond-like carbon) with excellent wear resistance, overcoming up to 60 degrees implant divergence. As the name implies, “amorphous diamond-like carbon” (ADLC) is a class of carbon bonds which displays several of the desirable qualities of a diamond. ADLC coatings are commonly used in the medical device field (e.g. hip joints) and reduce abrasive wear prolonging the lifetime of the medical appliance. Both a straight and a 15 degrees angled abutment, available in various gingiva heights, cover a broad range of clinical implant situations. Together with its durable PEEK (Polyether ether ketone) matrices, the Novaloc Retentive System provides a reliable connection that endures. This results in low maintenance and high patient comfort. Let your patients profit from the endurance of a reliable treatment solution. Learn more: http://starget.straumann.com/tag/novaloc

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As a result of growing demand, dental laboratories that can provide high-quality implant bars to support overdentures will find new business knocking at their doors. Ramping up implant bar production, however, can require a significant investment in equipment, time and staff training, which many labs simply cannot afford. Labs can instead receive a range of high-quality, precision-milled implant bars, simply by sending a model to NobelProcera. This flexible approach to outsourcing offers many benefits for labs. Primarily, it means they can offer precision-fitting bars in NobelProcera’s renowned high quality without needing to invest in a NobelProcera CAD system or purchase and maintain expensive production technology.

By removing the need for investments and offering unrivaled results, NobelProcera’s Scan and Design Service makes it possible for labs to take advantage of requests for high-quality implant bars that they might otherwise be forced to pass up. In other words, it affords labs the flexibility to take opportunities that they can’t afford to miss.