Immediate implant placement in the aesthetic zone

What I have changed in my everyday practice due to failures

Shortening of treatment time in implant dentistry is an attractive option for both the patient and the doctor. It is even more appealing if surgical morbidity, number of appointments and costs can be reduced at the same time. Unfortunately, taking a short cut does not necessarily mean that you can always expect to save time and effort. Immediate implant placement after a planned tooth extraction in the aesthetic zone is a case in point. It can range from a straight road to superb results, to a nightmare race against biology that you can’t win.

If you haven’t yet experienced buccal soft tissues melting away from the provisional crown you had installed on the implant you placed immediately into the central maxillary incisor socket – lucky you. I have had a couple of these moments when you can feel yourself slowly turning from a hero into a loser – and not only in the eyes of the patient.

One of the reasons why things can go seriously wrong is because what looks so easy is extremely complex. And if we are not in control of all the details, there are few places in the aesthetic zone to hide the results of misconceptions and faulty strategies. Many problems can be prevented by paying close attention to the correct vertical and horizontal positioning of the implant and the choice of the implant axis. Yes, we all know that the implant should be placed along the palatal wall of the socket, and that a buccal inclination can cost the patient some 0.5mm of gingival recession. It is also well understood that the implant head should be at or slightly under the level of the crest – which can be identified by probing. And finally, if the gap between the implant surface and the buccal socket wall exceeds 1.5–2mm, it might need grafting, not so much to regenerate the gap but more to maintain the buccal contour.

But even if I obey all these rules and do everything right, I can still select the wrong patient. As a result, we now focus much more carefully on case selection and evaluation before and during the extraction process, asking ourselves a number of questions:

- What kind of biotype is present at the planned site of implant placement?
- How thick is the buccal socket wall?
- Is the patient a normal crest or a low crest type?
- Is the socket wall intact?
- Does the buccal contour of the socket stick out from the neighbouring teeth towards the lip?
- Where is the smile line located?

Several factors can indicate a high risk of buccal bone resorption and untoward effects during soft tissue remodelling. These include:

- A thin buccal socket wall (<1mm; roughly two thirds of all cases)
- If soft tissues belong to the thin biotype (probe shines through the marginal gingiva during probing) with gingival height less than 2mm
- If there is a low crest and/or a damaged buccal socket wall

In these cases, we would clearly postpone the implant placement and use grafting material to fill the socket for ridge preservation. This will not completely prevent the post-extractional resorption, but will reduce horizontal shrinkage by roughly 60% and almost completely eliminate the vertical component of resorption. The grafting material may not become consolidated during the three to four months that we wait before we move on to implant placement. But even if we have to regraft defects after removal of non-consolidated grafting material, the contour of the skeletal envelope at the site of implant placement will be maintained well enough through the ridge preservation procedure to allow for soft tissue coverage of the augmented area without extensive releasing incisions or additional perioplastic surgery. In this way, decision-making in the treatment strategy in the aesthetic zone has become more relaxed and less adventurous when it comes to the timing of implant placement.

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