



I'll use a few more screws!

... I recently told my colleague one Friday afternoon. He agreed that he, too, would be doing more of the same. So I asked him what type of car he intended to work on. Well, while he was still thinking implants, I was already thinking about my hobby. What he meant was, that instead of using cemented crowns on implants, he would return to using screw-retained crowns on implants.

When I observe the trend at courses and conferences, I get the feeling that if I continue using cemented implant restorations, I am a bit behind the times. Or maybe I am not open to progress. If we look back in history, the first implant-supported fixed restorations were always screw-retained. Even several abutment planes were used to avoid contact with the mucous membranes ("high water bridge"). This method also allowed easy access to the screws for tightening or replacing them.

The next technical achievement was the introduction of coated or correctly calculated and precisely manufactured screws that did not loosen when tightened with specified torque. That meant one could securely attach the abutments, allowing „risk-free“ cementing because the screw, which was no longer accessible, would not loosen [1, 5]. At the time, I liked this system, and still do to this day, because natural teeth do not have holes in them.

We all learned the hard way that placing and maintaining cement-retained implant-borne restorations is easier said than done, due to the lack of gingival and periodontal fibers. The cement can run almost anywhere and will almost certainly cause harm. And the lower the margin between abutment and superstructure, the more difficult cement removal is, and the more residue is left in place [2]. Indeed, there seems to be a higher risk of biological complications with cement-retained restorations [5]. However, it is unclear if this is due to the cement residue alone or bacterial colonization in the extra seams and joints [3]. Or perhaps bio-mechanical factors also play a role. The two latter factors were not included in the analysis of systematic reviews as these were not reported in the relevant clinical papers.

At present, the underlying tone appears to dictate using screw-retention where possible. From a prosthetic point of view, however, this is often impossible due to axial inclination, particularly in the anterior maxillary region, which would result in labial and thus visible screw channels. Then it is induced that all one must do to achieve correct axial alignment of the implant is augment the area accordingly and everything will be OK.

So which version is correct? The first conclusion at which one can surely arrive is that any irregularities at the abutment-superstructure interface are to be avoided. This applies to cemented joints, but also to contraindicated or poorly finished material surfaces. Every dentist should know this, as it applies to all traditional restorations. There are a number of rules that should be followed – the most important being placement of the abutment-superstructure margin as far from the sulcus as possible, towards the coronal aspect. In the posterior region, this is usually easy to do. Custom-fabricated abutments are excellent for this. In the posterior region, an occlusally screw-retained crown is a good alternative if aesthetically acceptable. Industrially-manufactured and meticulously polished high-strength ceramic is preferable to alloys in the peri-implant soft tissue area; Hand-cast alloys should be avoided altogether [4]. And if one intends to cement a crown, then residue must be removed completely.

In the anterior region it is often the axial inclination which is a critical problem where esthetics are concerned, something experienced less frequently in the posterior region. If an axially screw-retained restoration is not an option even with curved screw channels and spherical-tip screwdrivers, you will have to resort to cementation. Then, the same rules apply as outlined above.

I personally think it is difficult to "help" patients achieve correct implant axial inclination by augmentation with the single aim of placing a screw-retained restoration. This is because questions of indication, surgical risks, long-term prognosis, and justification arise. These must be weighed against the anticipated benefits.

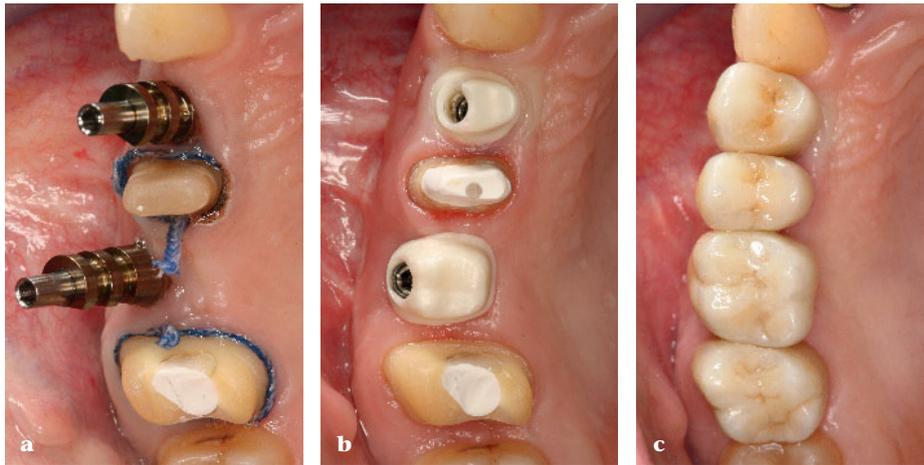


Figure 1a-c The patient had already consulted several dentists who capitulated in the face of providing these alio loco implants with restorations. The axial inclination was a challenge to the prosthetics. Custom-fabricated abutments – ready-made abutments had to be reworked as there were no adhesive bases for the system in use. CAD/CAM ZrO₂ abutments which were adhered to the custom-fabricated titanium bases. The cement-retained full-coverage all-ceramic crowns. Figures: Guido Heydecke

I urge us all to use good clinical judgement when answering questions concerning restorative options. It's simply not a case of „either/or“, but rather an assessment of correct indication followed by a patient-oriented and shared decision. Paired with first-rate surgical, prosthetic, and technical execution. Only then will the issue of cement-retained (fig. 1a-c) versus screw-retained become irrelevant.

Sincerely yours,

Guido Heydecke, Hamburg

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