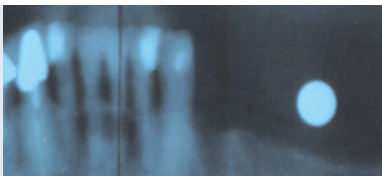


Planning and Selection of Implant

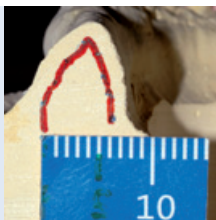
The implantation should always be carried out in the position which is most favourable from the point of view of prosthetics taking account of the anatomic and bone-physiological conditions. In the ideal case, a multilateral bone wall of at least 1.0 mm surrounds the implant in an area in which the gingiva cannot be displaced.

There are various options for the selection of the implant, each of them being based on X-ray diagnostics. This may be carried out by two- or three-dimensional CT or MRT methods.

For the esthetic and functional success of the implantation, the optimal positioning of the implants should be identified in cooperation with the dental technician.



The X-ray sphere in the template / thermo-formed splint shows not only the position of the implant but also the gingival height to be expected (hint for calculation: scale of radiograph = dia. of sphere / dia. of original sphere).



The measurement results from the radiograph (bone height = bone height on radiograph / scale of radiograph) and the results additionally obtained for the mucosal thickness furnish an almost three-dimensional impression of the bone profile that can be transferred to the model.

With the planning tool (Fig. 3, see also following page) it is now possible to select the respective implant true to scale. Please note: Due to the design, there is a difference between the possible insertion depth of the implant and the drilled cavity of 0.3 mm (Fig. 4).

In the case of well-founded indications, the advantages of three-dimensional diagnostics should always be set against the risks.

These risks are related to the exposure to radiation which at present is of the order of approx. 2 to 4 mSv and thus approx. 100 to 1000 times that for a conventional radiograph.

The manufacture of the drilling templates is, however, based on the analysis of the bone structures in which experience plays an important part. Analysis errors (position of the mandibular nerve, bone boundaries, etc.) are transferred to the template to be fabricated.

The advantage of three-dimensional template navigation consists in the virtual preliminary planning and the ascertainment of the bone situation, e.g. width of residual ridge, cavities and potential resorption zones. As it is possible to get the jaw model, including the desired drilling templates, before the surgery, it is possible to better plan the surgery and to fabricate temporary dentures beforehand. Considering the investment involved and the higher costs for the patient (CT examination, drilling templates, fee for attending dentist), the “conventional” diagnostics by OPG is an option.

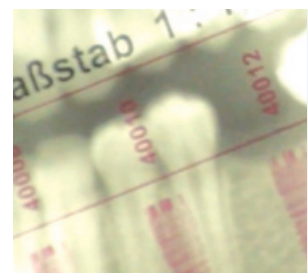


Fig. 3

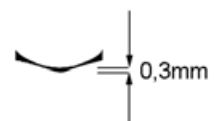


Fig. 4

