Prosthetic reconstruction of the gingiva and teeth using a BioHPP bridge with transversal screws

Introduction
Reconstruction of gingival areas presents a particular challenge for the treatment team. In the case in question, an implant bridge with transversal screws (BioHPP frame) was used to restore a highly atrophied alveolar bridge. It was possible to build up the gingival areas using a pink composite material and create an aesthetic and unobtrusive look.

Case Description
A patient requested a fixed and aesthetically pleasing restoration for her partially edentulous maxilla. Teeth 21 to 25 did not require any treatment. The bridge on teeth 11 and 21 had a support with a free end at region 13/14. The significant degree of bone recession meant that the abutment teeth had become loose and required extraction. There were various bowl-shaped areas where the bone was defective. Following a planning and consultation phase, the decision was made to insert three implants at region 11, 14, and 16. The idea was to avoid any extensive bone augmentation measures (such as a sinus lift). As the patient’s laugh line was relatively low, there was no good reason for not proceeding with a prosthetic reconstruction of the gingival areas. Once the implants had been allowed to heal, a frame was prepared to be fixed to the implants using transversal screws. The PEEK-based material BioHPP (bredent) was used for this purpose. This high-performance polymer, which contains ceramic fillers, has impressive physical properties, is low in weight, and can be relined.

The frame model was converted into BioHPP via the compression-moulding process (for2press system). The visio.lign veneer system was used for the veneers. Adequate bonding could be ensured with the adhesive, visio.link. After a degree of customisation, and once the gingival areas had been given a natural veneer with crea.lign GUM, the bridge was ready for insertion. Integration using the transversal screws was relatively simple. On the day the device was integrated, the patient was so happy she was moved to tears.

Summary
Despite the considerable bone deficiency, it was possible to give the patient a suitable prosthesis without extensive surgery. Thanks to the transversal screws, the implant bridge is partially removable. This facilitates professional cleaning and also allows some relining. The restoration was achieved using a uniform material concept (bredent). The low laugh line means the transition to natural structures is invisible.