Symmetry and aesthetics
Harmonious treatment of peg teeth with a high-performance adhesive system

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Achieving the best possible outcome with as little effort as possible is a principle of eco-
nomics that when applied to dental medicine translates to creating an aesthetic restora-
tion with minimally invasive or non-invasive procedures.

Dental anomalies pertaining to the shape or the size of teeth may be symmetrical or asym-
metrical. Often such anomalies can be seen on the lateral incisors, a condition also known as
“peg tooth”.

Previously, a number of treatments were recommended, including extraction of the tooth
with subsequent orthodontic correction of the gap or placement of an implant-retained restoration. However, the advent of new possibilities in the area of adhesive cementation in con-
junction with highly aesthetic and high-strength glass-ceramic materials has provided clinicians with
an economically efficient and functionally sound alternative treatment method.

Owing to the restricted size of the bonding surface, the treat-
ment of peg teeth demands the

use of a high-performance adhesive system. Total-etch systems are preferred over self-etch sys-
tems in such cases. Clinicians also have to ensure that tooth preparation is confined to the
dental enamel.

Clinical case

A 16-year-old female patient requested enhancement of the aesthetic appearance of her
smile (Fig. 1), as she disliked the compromised appearance of her anterior teeth due to her peg-
shaped maxillary lateral incisors. Orthodontic treatment had been performed two years be-
fore, during which it was decided that the peg-shaped teeth should be preserved (Fig. 2). Now
the time had come to correct the shape of teeth 22 and 12 using adhesively cemented all-ceramic
veneers made of IPS e.max Press ceramic (Ivoclar Vivadent).

As a reference, an intra-oral image taken from the lateral aspect was digitally modified, which
allowed the dental technician to plan the restoration effec-
tively and to fabricate a wax-up according to the desired out-
come. In addition, it gave the clinicians a clear indication of
how to modify the gingiva. Prior to the treatment appointment,
the model and the wax-up were recorded in the form of a silicone
key and transferred to the mouth using the method developed by
Galip Gürel at the New York University College of Dentistry
(Fig. 3).

The silicone key for the lat-
eral incisors was filled with Tello CS C & B (Ivoclar Vivadent), a
self-curing, temporary crown and bridge material for the fabrica-
tion of temporary restorations, and then inserted into the mouth
(Fig. 4). After two minutes of curing, the impression was re-
moved and the restorative pre-
view was shown to the patient.

Both the patient and the dentist were satisfied with the defined shape of the lateral incisors.

The depth-marking grooves through the composite masks were made (Figs. 14–16) to ensure that as much dental enamel as possible was preserved, as this is also conducive to the quality of the bond that is achieved. These grooves served as reference points throughout the prepara-
tion process.

Minor gingival modifications were also made during the same appointment in order to achieve a harmonious and aesthetic emergence profile (Fig. 7). After a healing phase of one week, the
impressions for the fabrication of the master model and the final restorations were taken.

The dental technician produced two veneers made from IPS e.max Press material in the UFA1 shade.

In terms of shape and size, the wax-up served as a reference (Fig. 8).

Cementation of the veneers

The two veneers were tried in with yellow-shaded and trans-
parent glycerine gel (VarioLink II

A mixture of both materials was used to create a harmonious transition between the canines
(showing a high shade satura-
tion) and the very bright central incisors.

In this case, the VarioLink II
dual-curing composite system and the EcdTF, D 136 adhesive (Ivoclar Vivadent) for the cemen-
tation of the veneers was chosen.

Excess cementation material was largely removed after poly-
merisation for three seconds in the Soft mode of the curing light,
and the fine excess was removed after final polymerisation in the High mode (Fig. 9).

Conclusion

The lithium disilicate crys-
tals in IPS e.max Press enable fabrication of highly aesthetic restorations with mechanical strength, compatibility with ve-
nearing ceramics and excellent optical properties. By combin-
ing the material with a total-
etch cementation system such as VarioLink II, clinicians can treat cases involving adhesively ce-
mented ceramic restorations with confidence.

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