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 economics that when applied to dental medicine translates to creating an aesthetic restoration with minimally invasive or non-invasive procedures.

Dental anomalies pertaining to the shape or the size of teeth may be symmetrical or asymmetrical. 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 conjunction with highly aesthetic and high-strength glass-ceramics has provided clinicians with an economically efficient and functionally sound alternative treatment method.

Owing to the restricted size of the bonding surface, the treatment of peg teeth demands the use of a high-performance adhesive system. Total-etch systems are preferred over self-etch systems 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 before, 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 lithium disilicate glass-ceramic (Ivoclar Vivadent).

As a reference, an intra-oral image taken from the labial image of a silicone key for the lateral incisors was filled with Telio (Ivoclar Vivadent), a self-curing, temporary crown and bridge material for the fabrication of temporary restorations, and then inserted into the mouth (Fig. 4). After two minutes of curing, the impression was removed 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 matrices were made (Figs. 14 & 15) 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 preparation 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 LTA1 shade in terms of shape and size, the wax-up served as a reference (Fig. 5).

Cementation of the veneers
The two veneers were tried in with yellow-shaded and transparent glycerine gel (Vadink II Try In pastes, Ivoclar Vivadent). A mixture of both materials was used to create a harmonious transition between the canines (showing a high shade saturation) and the very bright central incisors.

In this case, the Vadink II dual-curing composite system and the ExciTE F DSC adhesive (Ivoclar Vivadent) for the cementation of the veneers was chosen. Excess cementation material was largely removed after polymerisation 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 crystals in IPS e.max Press enable fabrication of highly aesthetic restorations with mechanical strength, compatibility with veneering ceramics and excellent optical properties. By combining the material with a total-etch cementation system such as Vadink II, clinicians can treat cases involving adhesively cemented ceramic restorations with confidence.

Editorial note: A complete list of references is available from the publisher.

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