COMMENTARY

EFFECTS OF PORCELAIN LEUCITE CONTENT, TYPES OF ETCHANTS, AND ETCHING TIME ON PORCELAIN-COMPOSITE BOND

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Most ceramic restorations strengthened with alumina or zirconia cannot be etched, but ceramics reinforced with leucite can be.[1] This study sheds light on a practical question: What is the best way to etch two common forms of leucite dental porcelain? Leucite imparts significant strength and fracture resistance to porcelain, and it is helpful to have a recent, straightforward study that addresses this issue.

It might seem intuitive that porcelain containing high levels of leucite would require a longer etching time, but it is reassuring to have this confirmed. It is also comforting to learn that the safer, more convenient gel form of 10% HFA is preferred over the liquid form.

The take-home message here is to use a 9.5% HFA gel and etch MLC porcelain for 60 seconds and HLC porcelain for 180 seconds. Silanes can increase bond strength even further.[2] However, as there are cohesive breaks within the porcelain without silanes (as is reported in this study), it may be unnecessary to use silanes if the porcelain is etched properly.

There also has been some discussion whether sandblasting with aluminum oxide is beneficial, detrimental, or simply unnecessary. We know that adhesive systems used in dentistry perform best when bonded to clean, high-energy substrates. The protocol in this study called for sandblasting with low-pressure air (35 psi). Clinicians would be well advised to take away a second message from this article: If a restoration becomes contaminated with saliva, blood, and so on, it may be a good idea to lightly sandblast prior to etching, silanating, and cementing.

REFERENCES

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