A simple method to detect undercuts during tooth preparation for fixed prosthodontics

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During abutment tooth preparation for fixed partial dentures, the presence of undesirable undercuts, due to clinical complicating factors such as poor visibility and access, frequently is observed.1 The presence of undercuts may hinder the complete seating of the cast restoration, resulting in the need to recontour the prepared tooth and make a new impression. This article presents an easy and quick method for evaluating single or multiple tooth preparations to detect undercuts before making the final impression.

PROCEDURE

1. Make an irreversible hydrocolloid impression after gross tooth reduction using a partial perforated tray, and form the mold with a fast-setting stone. Temporization procedures can be initiated concomitantly to prevent loss of time.2
2. Using a pencil such as the analyzing rod of a surveyor, hold the lead parallel to the axial wall of the prepared teeth (Fig. 1, A) and draw 2 lines that encompass the entire circumference of the prepared tooth. The first one must be coincident with the junction between the axial wall and the cervical margin (Fig. 1, B), and the other must correspond to the junction between the axial reduction and the external cusp reduction (Fig. 1, C). Note that the

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Fig. 1. Procedural steps. A, Determination of axial wall of prepared teeth; B, cervical line; C, occlusal line; D, final aspect of cast; and E, occlusal view of convergence of prepared teeth.
occlusal line is not always coincident with the occluso-axial angle (Fig. 1, D).

3. An occlusal view of the cast allows a clear visualization of the convergence of single or multiple prepared teeth (Figs. 1, E, and 2). Undercuts or excessive convergence angles can be detected when the relative position of the 2 drawn lines are observed (Fig. 3).

CONCLUSION

The described method creates conditions for determining proper abutment convergence and a common path of insertion in multiabutment preparations. It is a time-saving procedure because the undercuts can be detected and corrected in the same clinical visit, before the final impression is made.

REFERENCES


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