GOLD COPINGS FOR PROBLEMATIC TEETH

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IT IS FREQUENTLY advantageous to be able to use teeth with doubtful longevity as abutments for a fixed or removable prosthesis or as units of a multiple splint. Teeth with periodontal involvement, pulpless teeth, short-rooted teeth, teeth with narrow, tapered, single roots, and some teeth with bifurcation or even trifurcation involvements *may* be used as abutments if they are properly protected.

GOLD COPINGS

Such problematic teeth may be covered with thin gold copings. These copings are cemented permanently to the prepared teeth before the telescoping overlay crowns are made (Fig. 1). When the teeth are protected by gold copings, temporary cement can be used to secure the fixed partial denture or splint in position. Without such protection, a temporarily cemented fixed prosthesis cannot remain in the mouth long, because of cement destruction by the mouth fluids and resultant caries. This situation is especially dangerous when the restoration is cemented temporarily to multiple abutments. The temporary cement on one or more of the abutments may leak without being detected, while the other abutments retain their cement and give a false impression of good retention. Unprotected teeth with no cement are subject to severe caries before the fault can be detected. The permanently cemented gold copings underneath the crowns of the fixed partial denture or splint prevent the development of caries when the temporary cement becomes defective. The gold copings cover and protect the individual teeth if the temporary cement washes out.

If the problematic tooth must later be removed, the temporarily cemented prosthesis can be removed easily and the condemned tooth extracted. Then the crown which had covered the coping can be filled with plastic, silicate cement, or gold. Thus, the same fixed partial denture or splint can be recemented and made still serviceable to the patient.

Other Uses for Copings.—Gold copings can be used to make abutments parallel as well as to protect teeth. Teeth which are not parallel can be covered by gold copings shaped so they are parallel to the other abutment preparations or castings. The telescoping crown that goes over the coping does not have to extend to the gingival margin of the tooth. It needs only to extend far enough to provide retention and at the same time be parallel with the other abutment castings on the restoration.

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Fig. 1

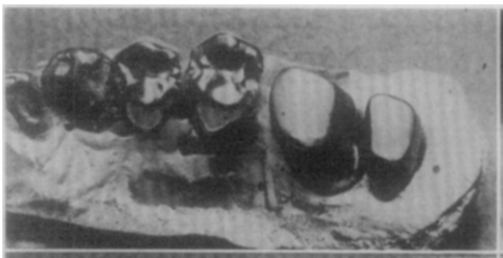


Fig. 2

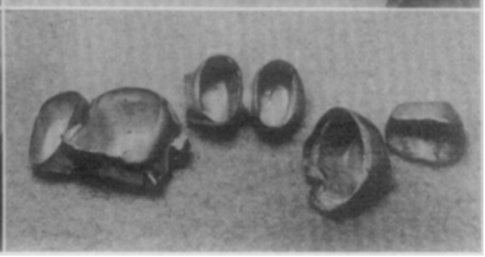


Fig. 3

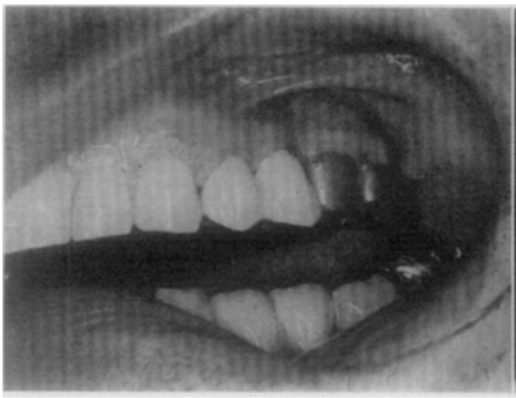
Fig. 4

Fig. 1.—The bicuspids and molars will be splinted together. There is a deep pocket between the molars. Thin gold copings are in place on the molars. The bicuspid veneer crowns are soldered together.

Fig. 2.—A screw fits into the small hole in the lingual surface of the first molar coping to provide mechanical retention for the telescoping overlay castings.

Fig. 3.—The threaded tubing that accommodates the retention screw is in position in the wax pattern.

Fig. 4.—The various parts of the completed fixed partial denture before insertion in the mouth. The molar trifurcation involvement is indicated by the contour of the molar casting. The screw is in position in the casting and will help secure it to the coping.



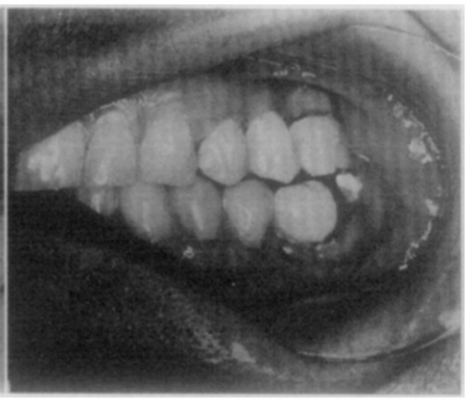


Fig. 5

Fig. 6

Fig. 5.—The copings are secured separately with a permanent cement; then the bicuspid veneer crowns are cemented.

Fig. 6.—The molar splint is attached to the gold copings with a temporary cement, and the screw is inserted from the lingual surface. The molar crowns are removable, which permits easy access for periodontal treatment.

RETENTION

The cast crown which covers the coping should be held in position by active mechanical retention in addition to the temporary cement. Mechanical retention can be accomplished by placing small screws* in advantageous positions through the crowns and into the copings (Figs. 2, 3, and 4). The tube to carry the screw is made a part of the overlay casting. Care should be taken to avoid drilling the hole for the

*Distal extension screw and round tube, The J. M. Ney Co., Hartford, Conn.

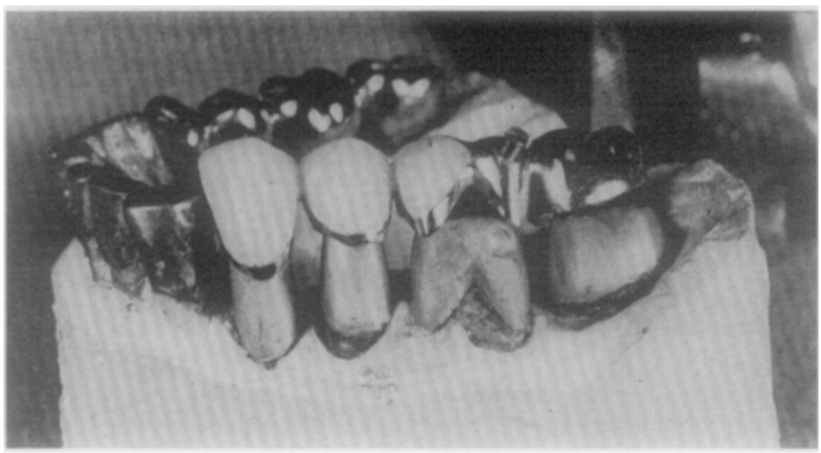


Fig. 7.—The gold copings will be attached with permanent cement. The overlay splint will be secured with temporary cement. The screw is in the buccal surface of the first molar casting. There is a similar splint on the right side.

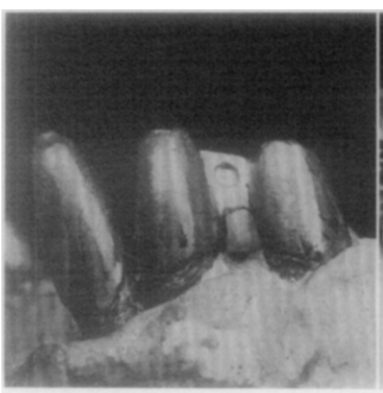


Fig. 8

Fig. 9

Fig. 8.—The copings are joined by a flat gold bar. The hole in the bar for the screw provides for positive retention without the danger of perforating an abutment coping.

Fig. 9.—The telescoping overlay fixed partial denture for the copings shown in Fig. 8. The receptacle for the screw is between the teeth.

screw too deep and perforating the coping. If the tooth should be exposed through the coping, silver nitrate is applied and the exposed surface is watched carefully. A silver filling can be inserted if caries develops.

The screws are inserted after the fixed partial denture or splint is secured in place in the mouth with a temporary (zinc oxide and eugenol) cement (Figs. 5, 6, and 7). There are several advantages in the use of a temporary cement. There is no chance for saliva to seep into the gold joints and to produce a foul odor because of its stagnation. Leaks in the overlay crowns may be detected by looking for brown oxidation when the fixed partial dentures are removed.

When there is a space between teeth, the copings can be connected by a rectangular gold bar and the retaining screw can be inserted into this bar rather than into some portion of the abutment coping (Figs. 8 and 9). This form of positive retention is effective and less dangerous to the tooth.

Fixed partial dentures or splints constructed in the manner described may remain in position from 1 to 6 months. If the mouth requires frequent prophylaxis or periodontal treatments, the prosthesis is removed. The periodontal pockets are far more accessible for treatment with the dental prosthesis removed.

SUMMARY

With the increased use of multiple splints and extensive dental reconstruction, gold copings under crowns provide an additional tool for the dentist. More questionable teeth may be retained. The copings permit thorough prophylaxis, provide a method of paralleling teeth without removing their pulp, and permit restorations to be cemented temporarily without endangering the abutment teeth.

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