

A TECHNIQUE FOR PLACING MULTIPLE COMPOSITE RESTORATIONS

by

T.R. TALBOT, BDS, MScD, FDS RCS

(Dept of Periodontology, The Royal Dental Hospital)

A technique is described whereby multiple composite restorations are placed in one appointment, accurately duplicating a diagnostic wax-up and so transferring pre-determined tooth contours into the mouth to restore a dentition with severe attrition/erosion.

ATTRITION, erosion and abrasion is becoming an increasingly common and a most difficult restorative dilemma as more teeth are retained in an ageing population. Extensive treatment in these patients can be very expensive. Whether the costs involve the patient directly or a third party, e.g. insurance or health service, these limitations often preclude the provision of multiple crowns.

A patient aged 75 years presented with a history of depressive illness and chronic regurgitation. He was, however, concerned about the appearance of his lower incisor teeth (Fig 1). Long operative procedures were contraindicated.

Impressions were made and a bite raising appliance constructed to establish that an increase

in the vertical dimension of occlusion would be tolerated. After three months, during which there had been no symptoms from the increased OVD, diagnostic casts were mounted on an articulator at the new vertical dimension. A diagnostic wax-up of the teeth to be restored was made, establishing the desired contours and occlusal scheme (Fig 2). A duplicate cast was made of this diagnostic wax-up and a clear vacuum formed splint constructed (Fig 3).

A clear custom matrix for the composites was then constructed on the diagnostic wax-up using



FIG 1 Lower anteriors exhibiting marked erosion/attrition.

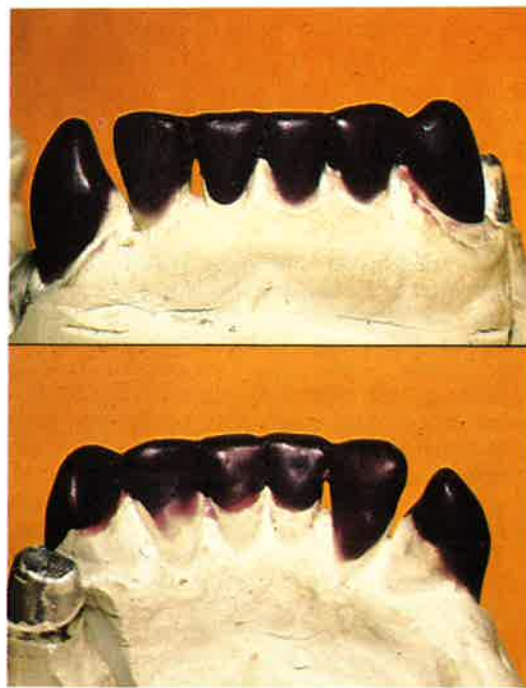


FIG 2 Labial and lingual view of diagnostic wax-up.

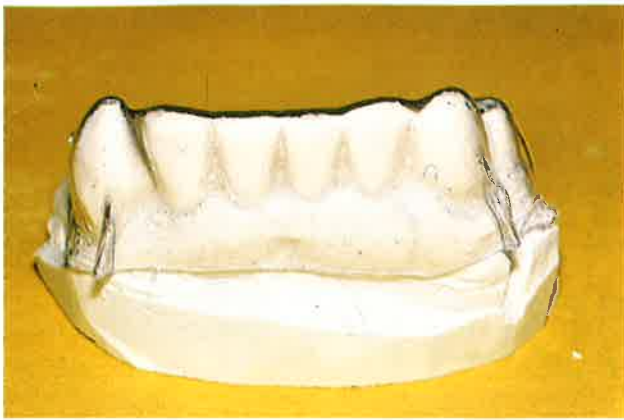


FIG 3 Vacuum formed clear splint formed on duplicate cast.



FIG 4 Application of rebase material to diagnostic wax-up.



FIG 5 1-2mm of rebase material applied.



FIG 6 Clear matrix removed from the cast following polishing.



FIG 7 Pulpal protection and auxiliary retention placed.



FIG 8 Vacuum formed splint placed to ensure that the pins do not extend beyond the desired contours.

Lang's Flexacryl* soft rebase acrylic. This material is usually used as a tissue conditioner for complete denture patients. Its value as a matrix material is that it gives a clearer, sharper impression than vacuum formed materials, it is elastic and sufficiently clear to use with light cured composite.

On the diagnostic cast, soft periphery wax is placed 3-4mm beyond the cervical margins of the teeth to be restored. Flexacryl soft rebase material was applied to the cast using a small paint brush and alternately dipping it in the liquid and powder (Fig 4). The cast was dipped in tap water at 120°F to control the flow of the material. When 1-2mm of material covered the cast (Fig 5) it was left in the water at 120°F for 15 minutes. The matrix was polished using pumice and a ragwheel to improve

light transmission through it, and removed from the cast. The material's inherent flexibility and elasticity allows the matrix to recover its form (Fig 6).

At the next appointment a thorough prophylaxis was carried out with pumice and water, and any necessary pulpal protection and auxiliary retention placed (Fig 7). The clear splint was placed to ensure that any retaining pins did not extend beyond the desired contours (Fig 8). Any that did were adjusted. The teeth were isolated with cotton rolls and high vacuum suction, and acid etched for 60 seconds with 30% orthophosphoric acid.

A microfilled light cured composite of the desired shade was selected and placed into the custom matrix, the matrix seated over the teeth, and the light source placed for 60 seconds on each unit on the labial surface of the matrix, followed by a further 60 seconds on the lingual surfaces. The

*Lang's Dental Manufacturing Co, 900 N. Franklin Street, Chicago, Illinois 60610, USA

A TECHNIQUE FOR PLACING MULTIPLE COMPOSITE RESTORATIONS



FIG 9 Final finished restorations.

matrix was removed and excess composite trimmed out with a scalpel blade, fine diamond burs and composite finishing discs and burs, ensuring complete separation of the teeth to allow optimum

home care. Due to the sharp internal detail of the custom matrix, very little trimming was necessary (Fig 9).

DISCUSSION

The technique described has been used not only in this elderly patient exhibiting marked attrition and erosion, but in several other cases including developmental anomalies such as peg-shaped lateral incisors and hyperplastic enamel, both localised and generalised. Young patients with a history of bulimia nervosa with induced vomiting, and other patients with a history of oesophageal reflux, have also been treated.

CONCLUSION

The technique described transfers the definitive contours of a diagnostic wax-up into the patient's mouth using composite resins. The restorations are placed in one appointment with a short operative period and reduced cost to the patient.

In addition, this conservative approach allows repairs to be made if necessary. The custom matrix and diagnostic cast may be retained for future use.

SPOT CASH PAID

For
PLATINUM FOIL
BASED ON PRICE OF THE DAY

SCRAP GOLD
BASED ON 16½Ct GOLD FIX

PALLADIUM FOIL
HIGHEST PRICES PAID

- Our agents will call or send by registered post
- Cash by return
- Postage paid

Strictest confidence at all times
Callers welcome by appointment

*No charges for melting & assaying

Scientific (Amalgam) Co
16 Parkside Drive, Edgware, Middx.
Tel: 01-958 6060

GUIDANCE FOR AUTHORS

ARTICLES submitted for publication in *Restorative Dentistry* should be related to conservative dentistry (including operative dentistry, crown and bridgework and endodontics), prosthetic dentistry, periodontology, dental materials or dental technology. The content should be of interest to practitioners, teachers or research workers in the field of restorative dentistry.

The average length of paper will be 2000-3000 words plus illustrations. Manuscripts should be typed on one side of A4 paper with double spacing and generous margins. A summary of not more than 200 words should be included at the beginning of the article.

Care should be taken to ensure that all references quoted are relevant, worth the reader pursuing and the most recent available.

The references should be listed at the end of the paper in numerical sequence in the following form: author's name(s) and initial(s); full title, the journal title abbreviated in the form used in the Index to Dental Literature; the date followed by a semi-colon; the volume number followed by a colon; the first and last pages. For example:

- 1) Elderton, R.J., Eddie, S. The changing pattern of treatment in the general dental service 1965-1981. *BrDentJ* 1983; **155**: 387-389.

Colour and black and white illustrations are welcome. Photographs should be in the form of colour slides or black and white prints. Radiographs are preferred as black and white photographic prints, but the original films may be submitted. Line drawings may be in colour or black and white and should be provided as camera-ready copy. All captions to illustrations should be typed on separate pages and the illustrations numbered, carry the author's name and an indication of the top of the illustration.

Manuscripts should be addressed to the Editor, Dr Bernard G.N. Smith, Floor 27, Guy's Hospital Dental School, London, SE1 9RT.

ERRATUM

We regret that in the article "A technique for making composite veneers at the chairside" in the October issue, Figures 4(a) and 4(c) were transposed. We apologise to the author for any embarrassment this may have caused.