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Guest article
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Mimicking TOOTH STRAIGHTENING

There is a crowd scene in the Monty Python movie *The Life of Brian* where the excited throng, mistakenly believing Brian to be their messiah, implore him for guidance. In desperation the reluctant hero proclaims "You have to work it out for yourselves!"

Brian's advice is open to debate but, just occasionally, it has some resonance with general practice. This is especially true when patients insist on simple solutions to complicated cosmetic problems.

In most cosmetic cases conventional protocols are well known and ideal treatment plans are usually formulated as a matter of course. It is when the ideal formula is rejected that alternatives, with all their advantages and disadvantages, have to be weighed.

To the extent that a broader range of options must, at least, be considered we do indeed have to 'work it out for ourselves'.

DIRECT BONDING AND ENAMEL CONTOURING

It is not uncommon for adult patients to present at general practices concerned about their 'crooked front teeth.' When the dentist is able to refer them for a specialist orthodontic consultation it is usually with a sense of relief. Orthodontics enjoys an outstanding success rate and, by definition, is the only discipline that can truly treat poor tooth alignment.

Conversely, when patients refuse to consider orthodontics the situation becomes more difficult. If there is to be progress the aim has to become less ambitious – not the straightening of teeth but the *appearance* of straight teeth.

Direct composite bonding and enamel contouring can sometimes offer a means of effectively repositioning teeth 1 or 2 mm. This can be enough to achieve a significant aesthetic improvement.

The techniques have limitations of course. Composite facings can readily 'move' teeth labially but bonding to proximal surfaces must not disrupt left/right symmetry.

Enamel contouring must be done judiciously. Reducing labial surfaces has the potential to alter translucency and can create a 'glassy' appearance at the margins or expose a shadow of dentine centrally. More critically, excessive trimming runs the small risk of pulpal sensitivity or damage. As with most procedures the patient must be fully informed.

PALATALLY INCLINED CENTRALS

Figures 1-4 illustrate two similar cases. Central incisors sloped palatally, gum margins were low, laterals had drifted mesio-labially and the overbite was excessive. There were many features of typical Class II, Div 2 malocclusions.

Initially, gingivoplasties were performed to crown lengthen the centrals. Two weeks later direct composite facings were placed to move these teeth forward.

In each case, the loss of available mesio-distal space was addressed by removing a small amount of mesial enamel from the tilted laterals. In order that the thickness of the bondings not be visible, the facings extended 0.5 mm inferior of the incisal edges.



Fig 1. Central incisors sloped palatally while laterals had drifted mesio-labially.



Fig 2. Direct bonding has effectively moved the centrals into a harmonious alignment.



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Fig 3. Many anterior features of a typical Class II Div 2 malocclusion.



Fig 4. The incisors, following gingivoplasty, enamel recontouring and direct bonding.

BUCCALLY PLACED CANINES

Figures 5 and 6 indicate a crowded and slightly rotated 23. The embrasure between the canine and lateral was excessive and unsightly.

Over two appointments the buccal enamel was contoured, using a long fine grit diamond and a 16 flute tungsten carbide bur to effectively move the tooth palatally. The incisal tip was also reduced to reflect the attrition experienced by an aligned canine. The mesio-incisal aspect was then bonded with nano-filled composite to create a credible, harmonious appearance.

Since the crowding in this instance was minimal it was possible to taper the enamel reduction into the cervical margin. Greater crowding would have presented an additional challenge. In such cases, if the lipline was low, consideration could be given to reducing the buccal surface and creating a buckjoint at the gum margin.



Fig 5. The 23 was crowded, buccally placed and slightly rotated. The patient considered it unsightly.



Fig 6. Whenever enamel is contoured the patient must be instructed in post-operative home care.

SEVERELY CROWDED SEGMENT

Figures 7 and 8 illustrate an open bite, a 13 that was high and buccally placed and a 12 that was palatally crowded and rotated.

At the first operative appointment the canine was extracted. Gingivoplasties were performed to crown lengthen both the lateral and premolar, including that tooth's mesial margin.

At the second visit the premolar's buccal wall was reduced, inclining the surface palatally. The 14 was then built up to resemble a canine, using the 23 as a guide.

A composite facing was then placed on the lateral, moving it labially and extending 1 mm distally, to partly close the gap with the adjacent 'canine'. Since the incisor's rotation was



Fig 7. A more complicated case.



Fig 8. Some simple procedures have led to a significant aesthetic improvement.



Fig 9. Severely crowded lower incisors. Laypeople would find the vertical discrepancies more noticeable than the lack of horizontal alignment.

maintained, viewed frontally its mesio-distal width would look similar to the left lateral; viewed from the side the difference would not be apparent.

CROWDED LOWER INCISORS

When lower incisors are crowded, lingually placed teeth are invariably overerupted, due to occlusal factors.

Dentists tend to view such teeth along their axes and note rotation and lack of labio-lingual alignment. These features will not be as obvious to laypeople at a social distance, interacting face to face.

Since the eye perceives *depth* inefficiently, it is the vertical discrepancy, rather than horizontal crowding, which is most apparent to the casual observer. Even when patients study their teeth in a mirror they usually tilt their heads so the line of sight angles downwards, further emphasising the look of vertical irregularity.



Fig 10. Following enamel recontouring.

By reducing the relevant incisal edges, sloping diagonally from labial to lingual, the teeth can be made to appear relatively straight, to the non-analytical eye.

Figures 9 and 10 demonstrate a typical case. Teeth 32 and 42 were overerupted, while the mesio-incisal corner of 31 was high of its neighbour and appeared jagged. Trimming was achieved with a long fine grit diamond bur, over two appointments. Fluoride varnish was applied and the patient instructed in applying topical fluoride gel and Recaldent Tooth Mousse™.

CONCLUSION

Orthodontics has continued to evolve and now incorporates many approaches other than simple banding. Nevertheless, some patients refuse to pursue orthodontics and their concerns must be respected. The above techniques are certainly not substitutes for orthodontics, merely compromise alternatives. What they presently lack are popular awareness and guidelines.



getting between the gaps

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