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ORTHOUPDATE



GOOD BYE CBD!

FROM THE 1ST OF OCTOBER 2008, I HAVE CEASED CONSULTING FROM COLLINS STREET ROOMS. I AM NOW AVAILABLE FULL TIME AT MY BALACLAVA ROOMS, 8 KM FROM CBD.

FOR CONVENIENCE, WE HAVE OFFERED ALL OUR COLLINS STREET PATIENTS AN OPPORTUNITY TO TRANSFER THEIR TREATMENT TO AN ORTHODONTIST IN CBD. I THANK ALL OUR REFERRING COLLEAGUES FOR THEIR PATIENCE AND SUPPORT DURING THIS TRANSITION PERIOD.

Welcome to another edition of our newsletter. Also thank you for the great feedback that we have received about the last newsletter. As you know, we go to great efforts to make this a professional and informative publication.

In this edition, I would like to discuss open embrasures and papilla reconstruction. I am also going to present a couple of cases treated with Lingual appliances.

As always, I am thoroughly enjoying photography, and most of my personal and more recently, my work related photographs, I shoot in RAW format to allow better fine tuning of white balance, colour saturation, noise and sharpness. If the image is captured as a JPEG file, most

of the adjustments have been performed in-camera and the ability to correct blown highlights or extract more detail is lost forever. With RAW files, the ability to extract more detail from the image only gets better over time as developers write better and better software to extract and manipulate RAW files. You can extract more detail today from a RAW image captured in 2002, then you could back in 2002!

If you have any queries about this newsletter or about RAW capture, please don't hesitate to contact me.

For now, please enjoy this newsletter.

Alex Yusupov

Open Embrasures

By Alex Yusupov

Open embrasure often is taken as a description for spacing between 2 adjacent teeth (diastema). While this is one extreme example of open embrasure, the more usual definition of open embrasure is a space between the contact points and the col of the papilla when the adjacent teeth are in contact (Figure 1). This is also known as a “black triangle”.



The relationship between the presence of papilla and the crestal bone was examined by Tarnow et al. (1992). They found a relationship between the presence of papilla and the distance between bone crest and the contact point (CP). They found that if the distance between the CP and crestal bone is 5 mm or less, the papilla was present 100% of the time. At 6 mm, only partial papilla was present, and at 7 mm or more, there was no papilla.

There are many causes of open embrasures and these can be divided into 2 broad categories:

1. Loss of crestal bone: - due to periodontal disease or trauma
2. Contact point is too incisal: - due to incorrect angulation of the teeth or triangular crown forms.

Does it matter?

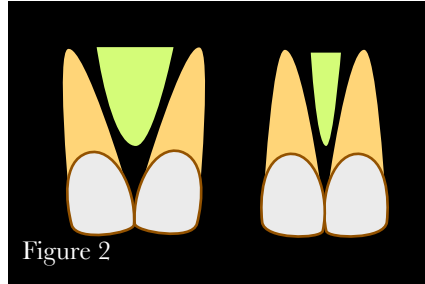
Is an open embrasure a cosmetic problem? Well this depends on who we ask. In their excellent study, Vincent Kokich Jr et al (1999) using photoshopped images, found that orthodontists are more discriminating than lay people or dentists at noticing open embrasures. The embrasures for lay people or dentists needed to be open 4 mm before they were deemed unsightly, while orthodontists were unhappy about open embrasures of 2 mm or more.

Treatment

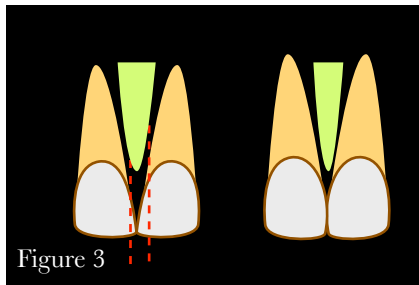
Normal bone levels

If the crestal bone levels are normal, then correction of an open embrasure will depend on the aetiology.

Correcting root angulation will allow repositioning of the contact point more gingivally (Figure 2).



Abnormal crown form or restorations can be corrected by re-shaping the crowns and space closure. If the roots are positioned well, restorative reshaping of the crowns to bring the contact point closer to the crestal bone may be sufficient (Figure 3).



In severe instances, we need to combine crown re-shaping, root re-angulation and restorative treatment to achieve an acceptable result (Figures 4 and 5).



Rebuilding the papilla

In some cases, localised loss of bone can be an aesthetic concern. Loss of interproximal bone will lead to loss of papilla, and moving the contact point to within 5 mm of crestal bone is just not possible. What about moving the crestal bone occlusally?

Well let's examine this option.



Figure 6 is a pre-treatment position of tooth 13. While appearing completely normal, this tooth was actually ankylosed. During the course of orthodontic treatment it was decided to break the ankylosis with subluxation of the tooth.

While this mobilised the tooth, it did result in a rapid loss of bone between the 13 and 12 (Figure 7).



The 13 was endodontically treated and the site received intense periodontal treatment but the papilla was lost.

Figure 8 shows the appearance of the papilla after deband



The photo below (Figure 9) was taken after perio debridement following the deband and now we can see the extent of bone loss and the loss of papilla.



Figure 9



Figure 10

The radiograph also shows the level of bone loss not only on the mesial of 13 but on the distal aspect of 12 as well (Fig 10).

As can be seen from the radiograph (Figure 10), no amount of root re-angulation and crown re-shaping is going to bring the crestal bone to within 5 mm of the contact point. Extracting the 13 would result in a through and through bone defect, with no hope of papilla regeneration and difficult grafting procedures with little chance of improvement.

At this stage it was decided to bring the crestal bone towards the contact point by orthodontic extrusion of the 13.

The next sequence of photographs (Figures 11 to 16) show this extrusion



Figure 11

process using sectional mechanics. The 13 at the start of extrusion process. Extrusion was achieved by using 17 and 16 as anchors and then using a sectional wire to create occlusal force on 13.



Figure 12



Figure 13



Figure 14



Figure 15

At this stage, the 13 crown needed to be re-shaped in order to bring the contact point occlusally. This was achieved with a new porcelain crown.



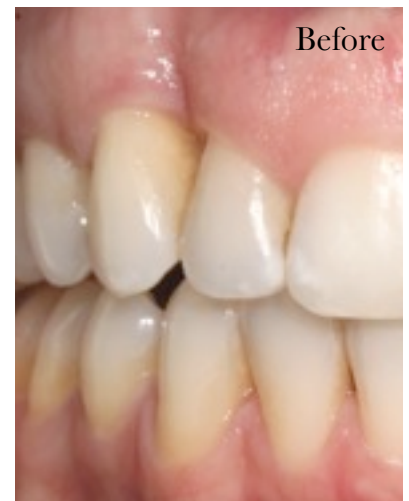
Figure 16

The final appearance of the crown and the papilla (Figure 16) - while not perfect, the defect and the papilla have been largely corrected.

Comparison of the pre-extrusion and post-extrusion radiographs (Figure 10 and Figure 15) shows the extent of bone formation. This was only possible by maintaining excellent perio health, having a root filled tooth (this allowed severe crown reduction during the extrusion process).

Lastly, the extruding tooth must be kept out of traumatic occlusion as it is moved occlusally. Occlusal trauma will end up "jiggling" the tooth, leading to more bone breakdown, rather than allow osteogenesis.

Extrusion of the 13 in this instance has corrected the potentially disastrous aesthetic defect. It has also improved the through-and-through defect. If the 13 is ever lost in the future, it will be an easier exercise to graft some bone for implant placement.



Before



After

References cited:

Tarnow, D.P., Magner, A.W., Fletcher, P. (1992). J Periodontol:63:995-996
 Kokich, V.O. Jr., Kiyak, H.A., Shapiro, P.A. (1999). J Esthet Dent:11:311-324

Lingual cases

We offer Lingual technique to any patient who want to keep their braces invisible. I would like to share a couple of quick case presentations with you.

Case 1.

Severe crowding upper and lower, Class II buccal segments, collapsed upper archform and high smile line.

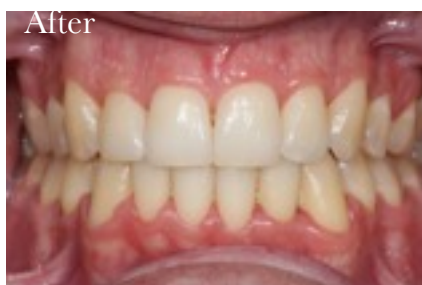


Treatment involved extraction of 4 premolars (asymmetric extraction in the upper).



Case 2.

Severe crowding upper and lower, missing 14, 5 mm midline discrepancy between upper and lower midlines and poor perio.



We can achieve the same quality of finish as with conventional braces.

WHATS NEW?

WEBSITE

Our website is now online! Of course this is the first instalment and we will be adding to the content as we go.

These newsletters can be downloaded from the website as well as any announcements of the upcoming courses will be available on the "doctors" page of the website.

You can browse our website on:

www.alexanderyusupov.com.au

We are slowly placing instructions for patients undergoing various orthodontic treatments. Please feel free to refer your patients to this information site.

IMAGE GALLERY

As most of you know, I love photography. I am slowly putting some of my photographs on a web gallery. The link to the gallery is as follows:

<http://gallery.me.com/alexanderyusupov>

NEW ORTHO REFERRAL PADS

Enclosed, please find our new referral pads and business cards, reflecting our address change.