Treatment Options for Abfractions

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If abnormal lateral forces are placed on a tooth, it will eventually break down over time just as a nail or coat hanger will bend and eventually break if they are continually bent back and forth.

In Summary:
Forces that can be working on teeth at any time.

Green arrow - only non-destructive force.

Blue arrow - lateral force from tongue.
Treatment Goals:

Selectively reshape or recontour tooth so that forces are directed down the central long axis of the tooth (Green arrow).

Loading forces should mainly be point contacts from the buccal cusp tips of the posterior mandibular teeth (red arrow) and the lingual cusp tips of the maxillary posterior teeth. (Anterior teeth addressed later.)
Treatment Goals continued:

A person exerting lateral forces on the tooth because of a tongue thrust (blue arrow) should be retrained to swallow properly by a person specially trained in myofunctional therapy or orofacial myology.

A person who is a bruxer / clencher can best be helped by an occlusal splint.

Principles of occlusion will be covered in another presentation on this website.
Treatment by equilibration only.
(no decay present)

I consider abfractions, gingival recession and gingival clefts as being in the same ‘family’ of defective lesions. I look for the same ‘causes’ in all these lesions. I believe many clefts are precursors to abfractions.

GV Black thought it was sometimes best not to try and put a restoration in these lesions. I agree with his position.
C7  1st bicuspid very sensitive. Equilibrated only. See next 6 slides.
Bicuspid guidance – only tooth contacting (green). See next 5 slides.
Heavy initial marks #12. See next 4 slides.
#12 equilibrated to a point contact – pain eliminated. See next 3 slides.
Heavy markings on opposing tooth #21. See next 2 slides.
#21 equilibrated to fine point on cusp tip. See next slide.
Guidance now only by cuspid (#12 not contacting). End of case.
(Reflective view) Very sensitive where recession is. See next 5 slides.
Bicuspid rise – instead of cuspid rise (Reflective). See next 4 slides.
Heavy marking caused by bicuspid rise (Reflective). See next 3 slides.
Heavy markings on opposing tooth. See next 2 slides.
Group function – equal force on all posterior teeth. See next slide.
Bicuspid rise

Group function
(All teeth picking up equal load during excursion.)

C19

End of case.
#5 – Inflamed and very tender. See next 4 slides.
#5 – Heavy contact on incline. See next 3 slides.
Heavy contact on opposing #28. See next 2 slides.
Occlusion refined to point contacts. See next slide.
Refined contact
Sensitivity resolved.

Original contact.

End of case.
#13 – Recession / abfraction / sensitivity. (Note angulation / position of lesion.). See next 5 slides.
Heavy marks on inclines #13 – Slightly rotated. See next 4 slides.
Contacts refined on #13 only. See next 3 slides.
Heavy marks before refinement.

Pin point refined marks

See next 2 slides.
C29  Heavy marks on opposing inclines on #19 & 20. See next slide.
C30

#19 & 20 contacts refined. End of case.
Recession on mal-aligned bicuspid. See next 6 slides.
Heavy markings on mal-aligned bicuspid. See next 5 slides.
Selective refinement of contacts. See next 4 slides.
Before

See next 3 slides.

After
Heavy contacts on opposing tooth. See next 2 slide.
Selective refinement of opposing tooth. See next slide.
Before

End of case.

After

Drs. Solnit and Stambaugh (Univ. of Southern California) did similar occlusal adjustments as just demonstrated on 25 cases. Their results were: “Partial to complete remission of the cleft was observed in all cases after occlusal adjustment.” (page 41)
Abfractions maxillary left. See next 6 slides.
Abfraction #19. See next 5 slides.
Heavy marking on lower left. See next 4 slides.
Abfraction #30. See next 3 slides.
Tori and heavy anterior incisal wear. See next 2 slides.
Splint showing central stops. See next slide.
Splint showing central stops and excursive marks. End of case.
Equilibration plus restoration.
Abfraction #29 – 4 bi-ortho. See next 2 slides.
# 29 Heavy markings from excursion. See next slide.
#29 Restored and equilibrated to point contacts. End of case.
Single abfraction with traumatic occlusion. See next 4 slides.
Abfraction on #20 plus marking on incline during excursion. See next 3 slides.
Post equilibration point contact on #20 plus restoration. See next 2 slides.
# 20 Restored and in occlusion. See next slide.
Guidance post-equilibration on cuspid only. End of case.
Single lesion #28. See next 3 slides.
Single lesion #28 – Heavy marking. See next 2 slides.
#28 Restored and marking refined to tip. See next slide.
Close-up of #28 restored. End of case..
#28 Single abfraction plus heavy marking. See next 5 slides.
#28 Single abfraction – heavy marking. See next 4 slides.
#28 Single abfraction – heavy marking on opposing teeth. See next 3 slides.
#28 Contact ‘walked’ to the point of the cusp tip. See next 2 slides.
Restored and equilibrated. See next slide.
C64

#28 Restored and in occlusion.  End of case.
Tissue graft/failure.
Old graft with new recession / abfraction. See next slide.
Heavy marks on tooth with graft – graft failed to solve problem. End of case.
Treatment with single crown
Large abfraction with horizontal craze lines. See next 3 slides.
Preparation with firm stain. See next 2 slides.
C71  Crown cemented on first bicuspid. See next slide.
Multiple abfractions / crowns
3 cases

Case 1
1998 – Anterior abfractions – 6 years later.
1998 – Anterior abfractions.
Lower teeth prepared for crowns.

C78
Temporary crowns on lowers.
Crowns on model.
Lower crowns cemented in mouth.
Lower teeth in occlusion.
Smile with lower crowns only.
Upper teeth prepared for crowns.
Clearance needed for fabrication of crowns.
Temporary upper crowns.
Crowns on model.
Upper and lower crowns cemented.
Teeth in occlusion. Can see posterior teeth still need crowns.
Before

After

C90
1998 – Posteriors still left to do.
1998 – Posterior abfractions right side.
Case #2
Multiple abfractions. Tongue thruster.
Anterior abfractions and fractured central.
Fractured central. Looks like it is layered in sheets!!
Same flexing pressure on the teeth as on the cards while being shuffled???
Abfractions – right side.
Abfractions outlined on models.
C105  Wax up on semi-adjustable articulator.
Wax up demonstrating cuspid rise.
Wax up – Anterior guidance following cuspid rise.
Wax up demonstrating anterior guidance in protrusion.
5 preps – one stop - clearance.
One ‘stop’ plus tongue thrust.
Preps plus tongue thrust more obvious.
Force from tongue thrust during his normal swallow.

Blue arrow – tongue thrust.
Temporary crowns in mouth.
Maxillary anterior crowns on model.
Maxillary anterior crowns in mouth.
Case #3
A pretty lady who would smile but not show her teeth.
Reason she would not show her teeth - abfractions and old restorations.
Close-up of old restorations.
Maxillary (upper) right abfractions.
Maxillary (upper) left abfractions.
Abfractions outlined on study models.
Case waxed up before treatment started.
4 lower veneers and 2 crowns (cuspids) in place.
Maxillary 6 anterior teeth prepared for crowns.
Strong tongue-thrust pushing tongue and saliva between teeth.
Multiple crowns in place.
Maxillary right abfractions.
Temporaries on teeth between appointments.
Crowns cemented.
Beaming smile upon completion.
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