SPRING 2024

Quarterly

Newsletter

Adult Orthodontics

Provided by:

STRICKLAND ORTHODONTICS

improving life, one SMILE at a time

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SPRING 2024

Dear Baldwin County Dental Offices:

Here at Strickland Orthodontics, we have decided to start doing a newsletter for our local dentists! We want to keep y'all up to date with any big news involving our practice and send over a few of our most exciting finished cases. We also wanted to use this opportunity to summarize a few relevant articles to help us all care for our patients in a more evidence based way! We hope that you all enjoy this, and we look forward to serving the Eastern Shore community alongside you. We have included Dr. Stephen's and Dr. Maggie's cell phone numbers at the bottom of the page. Please reach out to them directly with any concerns, questions, or to have treatment planning conversations.

Table of Contents:

Adult Orthodontics

Patient Examples

Case Studies

Doctor's Corner

Strickland Happenings

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ADULT TREATMENT

About 38% of our patients are adults. Some are coming to see us as relapse patients from their previous orthodontic treatment; however, many are seeking orthodontic treatment for the first time in their life. We always want a perfect result for all of our patients, but we often have to accept compromises and have more directed goals with adult treatment. Not having growth potential is a big limitation that we face with adults and the biologic limit of each patient must be taken into consideration when looking at crossbites and crowding.

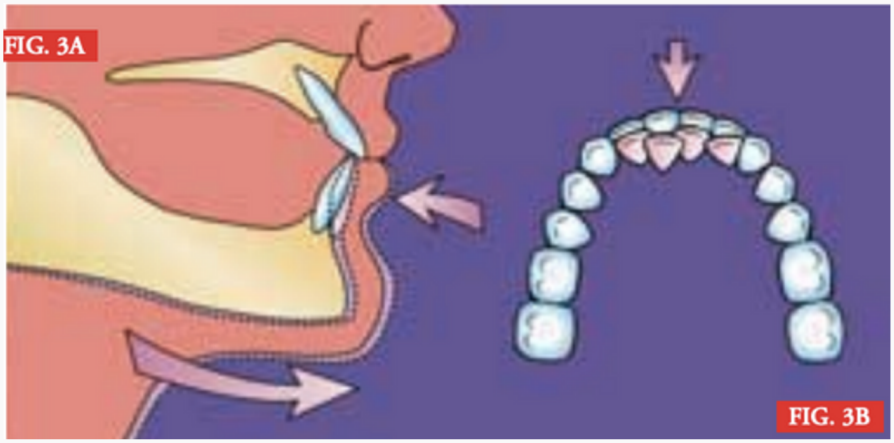
We aim to discuss compromises associated with treatment and any limitations prior to starting orthodontic treatment so the patient knows what to expect. For example, posterior crossbites are very difficult to correct in adult patients because the mid-palatal suture has fused. This limits us to only being able to affect the transverse discrepancy with "dental" or "tooth" movement alone--- no true skeletal change is possible. You can see a posterior crossbite that is maintained in a couple of the cases reviewed later in the newsletter.

MANDIBULAR CROWDING

This is the most common chief complaint among our adult patients. Why does this happen?

Two Theories to consider:

1) Pressure from third molars
- Timing makes sense
- Studies have shown that crowding still occurs with patients congenitally missing thirds
- This theory is a **myth!**



https://www.smartsmiles.com/Site/aao_brochures/late-mandibular-incisor-crowding.pdf

2) Late mandibular growth
- Lower jaw grows after treatment/in early adulthood and three things can happen:
  - (1) The mandible is displaced distally, accompanied by a distortion of temperomandibular joint function and displacement of the articular disc
  - (2) The upper incisors flare forward, opening space between the maxillary anterior teeth/causing rotations
  - (3) The lower incisors displace distally and become crowded.
- We usually see #2 or #3 present in our office!
- Soft tissue (lips, cheeks, tongue) also play a major role in this dynamic as well

Contemporary Orthodontics Textbook—Dr. Proffit

Patient Examples

1

Anterior crossbite; 11 month treatment

2

Lower incisor extraction; maintain posterior crossbite

3

Bite opening with braces

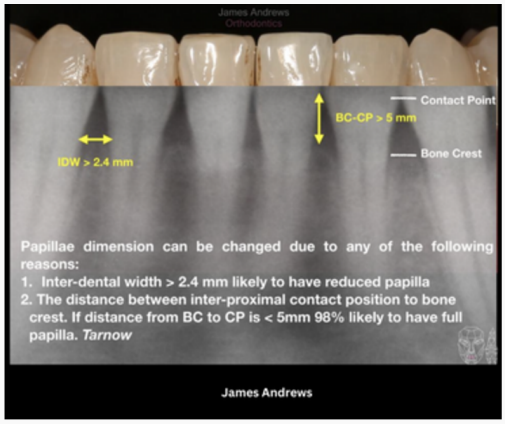
4

This patient has fairly aligned teeth and a great smile; however, functionally, we have major issues. This happens a lot of times in male patients who have late mandibular growth after their adolescent phase of orthodontic treatment. With elastics and IPR, we were able to get a much healthier occlusion established for this patient. 16 month treatment

Heavy anterior occlusion is really bad for the anterior teeth. It can cause them to wear down and have periodontal issues in the future. You can see how the teeth touching first in the anterior is causing the posterior teeth to disocclude!

Black Triangles

https://orthoinsummary.com/blog/black-triangles-who-did-it/



What is a black triangle?

"A black triangle is the cervical embrasure space to the interproximal contact point, in other words, it is the loss of the interdental papilla. A black triangle is a noticeable aesthetic concern to patients and ranked the third most disliked feature of an unaesthetic smile (Cunliffe, 2009). It commonly occurs following orthodontic treatment, with a recent systematic review showing an incidence of nearly 1 in 2, with 44.8% on average (Rashid, 2022). It is more common in adults, with a smaller incidence in those below 20 years of age with 1 in 5 affected (Ahmed, 1999). It is more common in the lower arch and also typically greater in size in the lower arch (An, 2018)

Kokich explored this with modifying smile photos, and a black triangle of 2mm (vertical discrepancy) was observed reliably by orthodontists, and 3mm for lay people (Kokich, 2005). This makes for interesting reading as not every black triangle is of aesthetic concern, similar to a Bolton's discrepancy, the relevance is not just in its presence, but the magnitude of its presence.

What causes black triangles?

Tooth shape plays a key role in the shape the gingiva, and therefore the papilla as well. A triangular tooth has a greater distance between the roots (and therefore greater stretching) due to a slender mesial-distal width of the root at the cervical aspect. Another flaw of the triangular tooth is that the root is wider at the labio-lingual aspect cervically, this results in wider (labio-lingual) interproximal bone with greater horizontal stretch of gingival fibers and consequently less height (Singh 2013). The distance between the roots at the cervical aspect has an association with black triangle formation, with 2.4mm or greater likely to result in a black triangle Martegani 2007. Distal tip of the roots has also been associated with black triangles.

5 mm rule

The distance from the base of the contact point to the crestal bone relates to the papilla formation. The '5mm rule', established by the landmark study by Tarnow 1992 states for a 5mm distance from the base of the contact point to the crestal bone, the papilla is 98% likely to be present, and for every 1 mm above 5 mm, the likelihood of a papilla being present reduced by 50%. The final flaw of the triangular tooth as the base of contact point is more incisal, there is a greater chance of there being a 5 mm distance when compared to square shaped tooth."

How to treat?

1. Reduce inter-radicular distance: The inter-radicular distance can be reduced through interproximal reduction. Simply reducing the mesial-distal width of the dentition followed by space closure (bodily movement) will achieve one of the key requirements for papilla formation.
2. Uprighting of the roots: Through second order bends or purposeful mesial rotation of the bracket bonding positioning can reduce the angle between adjacent teeth
3. Apical relocation of contact point: The '5 mm rule' can be achieved through interproximal reduction, which moves the contact point apically, and therefore closer to the crestal bone. This also reduces the appearance of those ever-flawed triangular teeth.
4. Composite bonding or veneers: alter the shape of the teeth and move the contact point apically.

Special Adult Case Reviews

The patient below presented to us with severe crowding in both arches and wanted to do Invisalign. We extracted #5 (UR4) and #25 (LR1) and were able to complete her entire treatment using only aligners. She was extremely dedicated and compliant! We are very proud of this dear patient and the results we were able to achieve for her. Adult treatment is super rewarding for all involved- it is never too late!

Patient presented to us at age 18 with anterior and posterior crossbite and severely impacted U5s. Expansion is much less predictable at this point, and we felt like the risks outweighed the benefits for bringing in the premolars. We decided to extract U5s and will maintain UEs for as long as possible. The transverse on right side isn't perfect, but we always discuss this prior to treatment as a possibility with post pubertal patients that present with crossbites in the posterior.

Doctor's Corner

We are a few months into 2024, and I hope it has been a great year for everyone so far! I mentioned last year that I enjoy picking a "word of the year" and keeping it in focus throughout the year! Our team did the same this year, and it was really great to have everyone share their reasoning behind their choice. I chose "compassion" and I thought I'd share a few of the words that our team members chose: "light", "goodness", "patience", "growth".

Maris Gras and Valentines Day in the same week!! How does this happen? I did a little research because this seemed so odd to me. Valentine's Day is always the same, but Mardis Gras is based on Easter each year. Mardis Gras is exactly 47 days prior to Easter and represents the last day before the start of the Lenten season. Lent is 46 days long if you include Sundays but only 40 days if you exclude them. I started thinking and realized I did not know how the date of Easter is chosen. I thought this was so interesting- Easter is always the Sunday following the first full moon after the vernal (or spring) equinox. Fun fact!

Dr. Maggie Grissom
Diplomate, American Board of Orthodontics

A few recent favorite books of mine!

Remarkably Bright Creatures	Die with Zero	Deception Point
By: Shelby Van Pelt	By: Bill Perkins	By: Dan Brown

Strickland Happenings

Has anyone been to Top Golf yet?! We went for a team building afternoon and had such a great time! We probably made way too much noise cheering each other on, but we just couldn't help ourselves. Definitely recommend!

We also had the opportunity to participate in a couple of the 5ks for our schools - Gator Chase and Pirate Dash! We always look forward to being out at the races and getting to chat with everyone! Already looking forward to next year!

Follow Us!

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