

Esthetics and Orthodontic Therapy

Dr. Vince Kockich 2006

In the afternoon he spent significant time discussing the loss of papilla (black triangle disease) and the role of the orthodontist, periodontist and the restorative dentist can play for an esthetic resolution. Enclosed is a record of a patient that recently was referred to my office that demonstrated the process of diagnosis reviewed by Dr. Kokich.

The five factors to be considered when making a diagnosis are:

1. Papilla vs. Contact
2. Root Angulation
3. Crown Shape
4. Tooth Size



This patient has a history of fracture of her right central incisor which was bonded several years ago. Prior to orthodontic therapy the central incisors were overlapped. The brackets removed a few months ago and a bonded splint placed on the lingual. Presently she is unhappy with the black triangle which now is noticeable.

Is this a Papilla or a problem with the contact?

The papilla does fill approximately 50% of the distance from the marginal gingiva, therefore clearly there is a problem with the contact point (or complete lack of) which should extend the rest of the distance.

Is there a problem with root angulation?

When a radiograph was taken clearly there was a problem with root angulation. The roots were not paralleled. This likely occurs due to the failure to line up the brackets perpendicular to the long axis of the central incisor. In this patient a fracture of the incisal edge and bonding of tooth #8 gave a false idea of the original position of the incisal edge and led to the root angulation problem. As the teeth were aligned the roots were distally diverged.



Is the problem with crown (tooth) shape?

If the tooth is very triangular in appearance (much wider at the incisal edge than at the cervical region) the contact point may be too incisally positioned. The papilla is unable to fill the entire shape created. Reshaping of the teeth can be done to alter the contact point and orthodontics or restorative dentistry performed to lengthened and move the contact point toward the papilla.

Is there a problems tooth size?

Ideally tooth size or proportion should be 67% to 80% width to length. Any significant discrepancies can cause the papilla to be unsupported, as in patients with periodontal disease. In this instance the teeth become longer as crestal bone is lost. Recontouring of the mesial surface and increasing the length of the contact point through orthodontics or restorative dentistry can give the illusion of papilla.

In the case pictured the solution to this loss of this papilla is to reposition the bracket slots perpendicular to the long axes of the roots. As the roots align the contact point lengthens and moves apically toward the papilla. The restorative dentist will need to replace the incisal restoration when complete.

