



Mucogingival Deformities: AAP World Workshop 2018

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Mucogingival Deformities

- ▶ Most common deformities
 - ▶ Lack of keratinized gingiva
 - ▶ Gingival recession
- ▶ Consensus ~ minimum amount of KG not required to prevent attachment loss if good conditions are present
- ▶ Attached gingiva is needed in patients with suboptimal plaque control

Mucogingival Deformities

- ▶ Clinical significance
 - ▶ Esthetically unacceptable for patients
 - ▶ Dentinal hypersensitivity
 - ▶ Exposed root surfaces
 - ▶ Carious lesions
 - ▶ Non-carious lesions ~ abrasions/erosion

Normal Mucogingival Condition



- ▶ Normal Mucogingival Condition
 - ▶ Absence of pathosis
 - ▶ Gingival recession
 - ▶ Gingivitis
 - ▶ Periodontitis

Periodontal Biotype

- ▶ Periodontal Biotype
 - ▶ Defined now by gingival thickness, keratinized tissue width, bone morphotype and tooth dimension
 - ▶ 3 types
 - ▶ Thin scalloped biotype
 - ▶ Thick flat biotype
 - ▶ Thick scalloped biotype

Thin Scalloped Biotype

- ▶ Thin Scalloped Biotype
 - ▶ Slender triangular crown
 - ▶ Subtle cervical convexity
 - ▶ Interproximal contacts close to incisal edges
 - ▶ Narrow zone of KT (typical range of 2.8mm to 5.5mm)
 - ▶ Clear thin delicate gingiva
 - ▶ Relatively thin alveolar bone (ave 0.34mm mean buccal bone thickness)

Thin Scalloped Biotype



Thick Flat Biotype

- ▶ Thick Flat Biotype
 - ▶ Square-shaped tooth crowns
 - ▶ Pronounced cervical convexity
 - ▶ Large/broad interproximal contact located more apically
 - ▶ Broad zone of keratinized gingiva (average 5mm to 6.6mm)
 - ▶ Thick, fibrotic gingiva
 - ▶ Thick alveolar bone (Average 0.75mm mean buccal bone thickness)

Thick Flat Biotype



Thick Scalloped Biotype

- ▶ Thick Scalloped Biotype
 - ▶ Thick fibrotic gingiva
 - ▶ Slender teeth
 - ▶ Narrow Zone of keratinized gingiva
 - ▶ Pronounced gingival scalloping

Thick Scalloped Biotype



Periodontal Biotype and Attached Gingiva

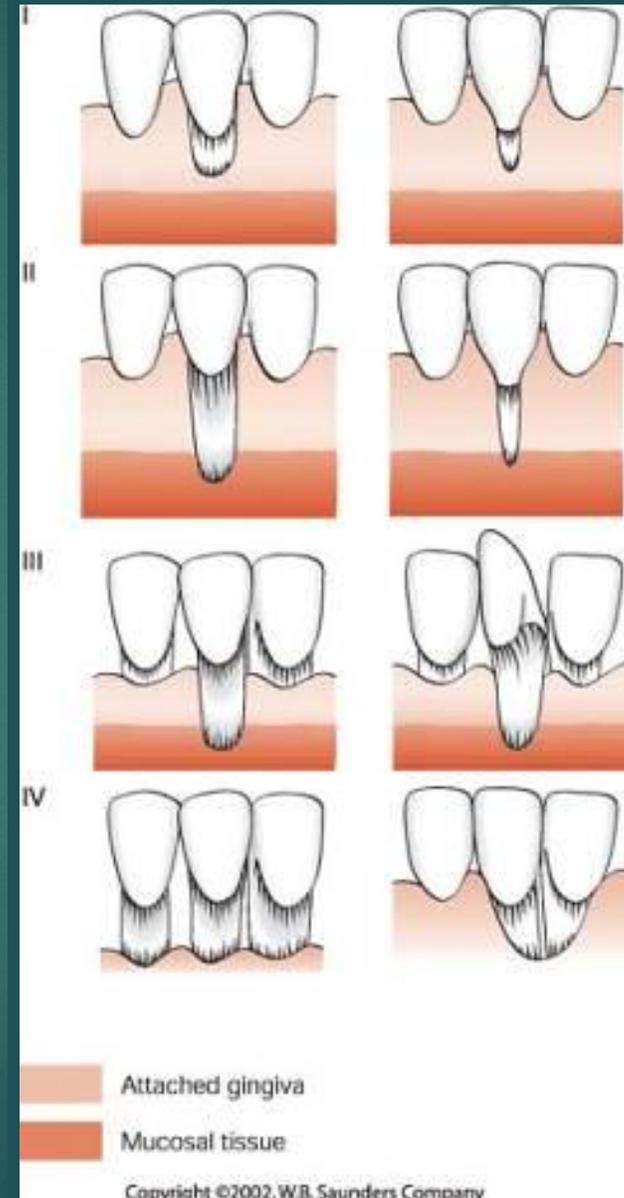
- ▶ Thin biotype, absence of attached gingiva, and reduced thickness of alveolar bone due to abnormal tooth positions are risk factors for recession
- ▶ Current consensus (low level of evidence) is that there needs to be 2mm of keratinized gingiva with 1mm of attached gingiva to maintain periodontal health

Biotype and Orthodontics

- ▶ 5-12% incidence of developing recession post-orthodontics
- ▶ Facially inclined teeth show increase in apico-coronal width of KT when teeth moved lingually
- ▶ Higher probability of recession during tooth movement in areas with <2mm of gingiva
 - ▶ May consider treating these areas prior to orthodontics

Miller Classification

- ▶ I - recession above MGJ with no bone/interproximal tissue loss
- ▶ II - recession to/or beyond MGJ with no interproximal loss
- ▶ III – recession beyond MGJ with interproximal bone/ tissue loss or malpositioned teeth
- ▶ IV - generalized recession with severe bone/tissue loss



Factors for a New Mucogingival Classification System

- ▶ Recession Depth
- ▶ Gingival Thickness
- ▶ Interdental Clinical Attachment Level

Recession Depth

- ▶ General consensus is deeper recession depth less likelihood for full root coverage
- ▶ Difficult to assess when CEJ has been obliterated by restorations, abrasion, caries, etc
- ▶ Anatomical CEJ should be reconstructed with restorative dentistry prior to coverage
- ▶ No significant evidence to show that recession increases tooth mortality

Gingival Thickness

- ▶ Gingival thickness <1mm associated with reduced probability of root coverage with advanced flaps

Interdental CAL



- ▶ Interdental Clinical Attachment Level
 - ▶ Recession associated with normal integrity of interdental attachment have higher likelihood of full root coverage
 - ▶ Loss of interdental attachment reduces likelihood of root coverage
 - ▶ Severe loss of interdental attachment impairs likelihood of root coverage

New Classification

- ▶ Proposed by Cairo et al
 - ▶ Recession Type 1 (RT1)
 - ▶ Recession Type 2 (RT2)
 - ▶ Recession Type 3 (RT3)

Recession Type 1

- ▶ Gingival recession with no loss of interdental attachment
- ▶ Interproximal CEJ is not detectable at mesial and distal aspects of the tooth
- ▶ Replaces Miller Class I/II
- ▶ 100% root coverage can be predicted

Recession Type II

- ▶ Gingival recession associated with loss of interproximal attachment
- ▶ Amount of interproximal attachment loss (Distance from CEJ to depth of pocket) is less than or equal to the buccal attachment loss (Distance from buccal CEJ to depth of pocket)
- ▶ Replaces Miller Class III
- ▶ 100% root coverage may occur but not as likely

Recession Type III

- ▶ Gingival recession with loss of interproximal attachment
- ▶ Amount of interproximal attachment loss (Distance from CEJ to base of pocket) is greater than the buccal attachment loss (Distance from buccal CEJ to base of pocket)
- ▶ Replaces Miller Class IV
- ▶ Full root coverage not achievable

Tooth Conditions and Recession

- ▶ Caries
- ▶ Non-carious cervical lesion
 - ▶ Acidic foods/beverages and medications
 - ▶ Smooth/broad shallow lesions with ill-defined margins
 - ▶ Toothbrush trauma
 - ▶ Sharply defined/notched out margins
 - ▶ No scientifically sound evidence showing occlusal overload leading to abfractions
- ▶ Efforts should be made to educate the patient when attempting to perform root coverage in areas where the CEJ has been obliterated by caries or non-carious lesions
- ▶ Restorations should be placed to reconstruct the position of the CEJ to facilitate root coverage procedures

AAP World Workshop New Classifications

Mucogingival deformities and conditions around teeth*

1. Periodontal biotype
 - a. thin scalloped
 - b. thick scalloped
 - c. thick flat
2. gingival/soft tissue recession
 - a. facial or lingual surfaces
 - b. interproximal (papillary)
 - c. severity of recession (Cairo RT1, 2, 3)
 - d. gingival thickness
 - e. gingival width
 - f. presence of NCCL / cervical caries
 - g. patient aesthetic concern (Smile Esthetic Index)
 - h. presence of hypersensitivity
3. lack of keratinized gingiva
4. decreased vestibular depth
5. aberrant frenum/muscle position
6. gingival excess
 - a. pseudo-pocket
 - b. inconsistent gingival margin
 - c. excessive gingival display
 - d. gingival enlargement
7. abnormal color

Conclusions

- ▶ Gingival recession associated with esthetic concerns, dentin hypersensitivity, and carious/non-carious lesions, not associated with increased tooth mortality
- ▶ Esthetic concerns, thin biotypes, dentin hypersensitivity, cervical lesions and mucogingival deformities best addressed with mucogingival surgical correction
 - ▶ Consider restorative care as needed
- ▶ New classification resolves issues with previous Miller Classification