ISSN No:-2456-216

Management of Mucogingival Defect in Young Patient

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Abstract:- The mucogingival lesions in children may be due disruption of the balance between bacterial challenge and host response. This disruption may be associated or not to some mucogingival deformities. What characterize the periodontium of children is the immaturity, the lack of attached gingiva which increase by time and its susceptibility to resorption.

In this manuscript, two clinical cases will be presented, the first case is about the excision of superior labial frenulum that block the closure of the diastema between 11 and 22 followed by free gingival graft: the donor site was maxillary buccal attached gingiva between the lateral incisor and the canine. Free gingival graft was also performed in the second case for the treatment of recession RT2 on the left mandibular lateral incisor, the donor site was the palate.

Total excision of frenulum plus sufficient height of attached gingiva in the first case, the closure of diastema was uneventful. Important but non full coverage of recession was obtained after surgery in the second case with a significant increase in attached gingiva. creeping attachment, coronal migration of the epithelium plus full coverage was reached at 15 months post-operative.

Maintaining a good oral hygiene plus early discovery of mucogingival deformities are the keystone to preserve a healthy periodontium from young age. Once the mucogingival surgery is indicated for children, it is mandatory to put in consideration the particularity of tissue working on and the repercussion of the intervention on the growing periodontium.

I. INTRODUCTION

The periodontium of childrendiffers from the periodontium of adults in several aspects:

- The gingiva is firmer, more reddish, vascular, flabby and lacks stippling;
- The marginal gingiva is rounder and more voluminous;
- The gingival height is greater in temporary dentition because of a larger;
- Periodontal ligaments in children are wider;
- Alveolar bone has less trabeculae and calcification, larger and more marrow spaces, along with greater blood supply and lymphatic drainage.

Child periodontium is more resorbable because of richness of sialoprotein and osteoproteinwhich enhance the binding of odontoclast.[1]

When the permanent teeth are upon eruption, there is no attached gingiva since the sulcus depth exceeds the width of keratinized gingiva. Then, the attached keratinized tissue gradually increases until reaching the adult size.[2]

Studies have shown that at least 1 mm thickness is required to prevent recession after scaling and root planing and get predictable results in procedures such as root coverageand guided tissue regeneration.[3]The volume of gingival connective tissue has greater significance than width in determining the susceptibility to recession.The insufficiency of keratinized tissue is developmentally related to the eruption pattern of the permanent incisors and buccolingual width of the alveolar process.[4]

Periodontal disease, which is defined as affections of the tissues supporting the tooth of microbial origin, consisting of inflammatory lesionsdependent on the host's defense system, leading to partial or complete damage and mucogingival lesions appear then.[8]

However, studies showed that despite the large amount of plaque on primary dentition comparing to permanent dentition, it was associated to less inflammation and most of periodontal disease are reversible with less tissue damage.[1]

According to a study conducted by Maynard and Ochsenbein, the prevalence of mucogingival problems in paediatric patients is 12–19% as estimated from a sample of 100 patients and 7.8% from another study on 688 casts of children in which recession in lower incisor teeth were studied.[4,5]

II. MATERIEL AND METHOD

A. Case report n°1:

14 years old female patient was addressed from orthodontic department to our periodontal department. At consultation, Absence of 21 which was extracted after an accident 2 years ago. The orthodontic treatment consists on moving the lateral incisor 22 to replace the 21. However, the frenulum was inserted on the papilla (grade 4 Classification of Kotlow). So, the release of the frenulum is necessary also the correction of the gingival defect with free gingival graft seems to be compulsory. The probing depth is about 2mm in the central incisor 11.

The area was anaesthetized with a local infiltration by using 2% Medicaine with 1/100000 adrenaline with Epinephrine1/100000. The frenum was engaged with a needle forceps which was inserted into the depth of the vestibuleand incisions were made on the upper and the

ISSN No:-2456-216

undersurface of the needle forceps. The triangular resected portion of the frenum with the needle forceps was removed. Dissection of fibrous attachmentwas done on the bone to avoid recurrence. Free gingival graft was collected from the attached gingiva between the 11 and 12 and used to replace the gingival defect after excision of frenulum. Interrupted sutures were made using 4-0 vicrylsuture.

Initial situation: papilla insertion of frenulum with absence of the 21

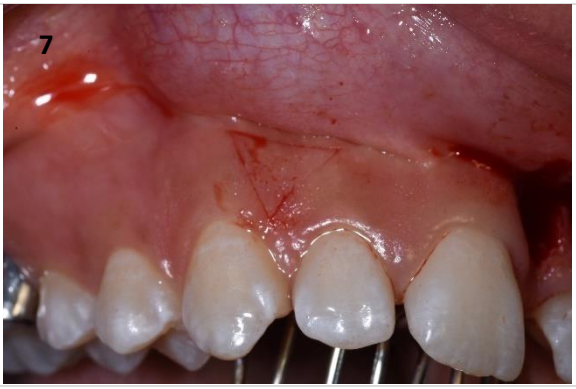
Determination of frenal insertion from the side of 11

Determination of frenal insertion from the side of 21

Incision with blade 15

Incision line

Recipient bed



Epithelio connective tissue graft

Graft in place

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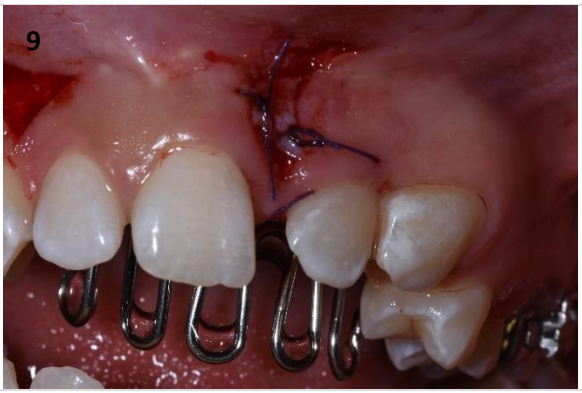
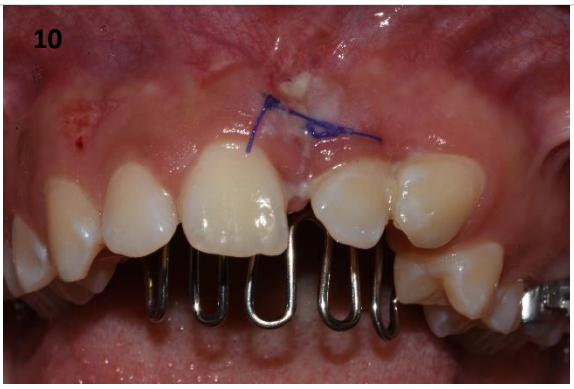
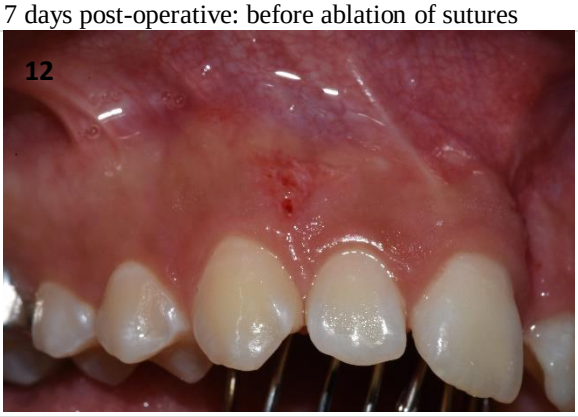


Sutures



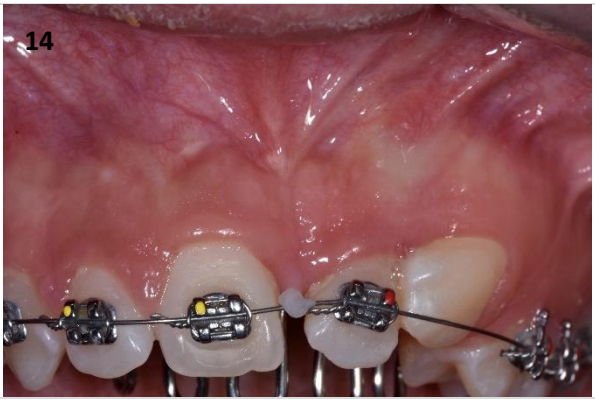
7 days post-operative: before ablation of sutures

After ablation



Cicatrisation of donner site

21 days post-operative



Braces in place

12 months Follow up Closure of diastema

B. Case report n°2:

12 years old female patient addressed to periodontal department of Monastir with an isolated recession on the 41. Clinical exam revealed absence of attached gingiva with 3mm recession on the right mandibular incisor with a malposition (vestibular position). Free gingival graft was indicated to increase attached gingiva and to cover recession.

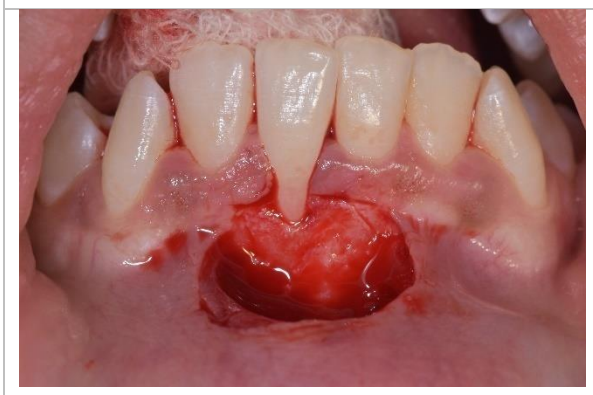
The area was anaesthetized with a local infiltration by using 2% Medicaine with 1/100000 adrenaline with Epinephrine1/100000.We started by preparation of recipient

ISSN No:-2456-216

bed which is 3 mm wider than the desired width of the keratinized tissue. A split thickness flap was separated without damaging the periosteum.

Harvesting the free gingival graft from palate than sling sutures were made to maintain the graft at its last position using 3-0 vicryl suture.

Initial situation:3mm recession with no attached gingiva apically



Preparation of recipient bed

Free gingival graftfrom the palate

Sutures

3 months post-operative

15 months post-operative

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III. RESULT AND DISCUSSION

For the first case, the frenulum resection following by free gingival graft from the vestibular aspect of gingiva between 11 and 21 which lead to the closure of the diastema and maintaining good oral hygiene. Orthodontic movements were uneventful.

For the second case, healing process was without any complication. Important level but not full coverage of recession was reached. However, thanks to the phenomenonof creeping attachment which defined ascoronal migration of gingival margin[6],an optimal recovery of the gingival recession was obtainedat one year and 3 months post-operative. No more recession on the 41 with an important gain of attached gingiva. A good oral hygiene was maintained with absence of clinical inflammation.

The occurrence of creeping attachment is non-predictable, according to some authors, il would be observed when the recession width is less than 3mm associated to an optimal oral hygiene.[6]

Besides mucogingival deformities, plaque is considered as the causative agent of mucogingival lesions and periodontal diseases.

To maintain a healthy periodontium, the balance between bacterial challenge and host response is important.That is why eradication of all oral infection sources considered as crucial. This is possible by Imparting knowledge of oral hygiene among children.

However, one study proves that parents education level and awareness regarding oral health preventive measures is considered as a keystone in determining the oral health of children.[7]

What characterize the periodontium of children is the immaturity,the lack of attached gingiva which increase generally by time and its susceptibility to resorption. Therefore, it is more susceptible to microbial invasion. Maintaining a good oral hygiene plus prevention by regular checkup is crucial to avoid mucogingival lesions and it is complications.Discovery of mucogingival deformities and factors that could generate such lesion and eliminating it at early age would be important to preserve a healthy periodontium and avoid major surgical interventions.

Once the surgical intervention is indicating, dealing with growing periodontium carefully is important regarding its particular characteristics and to avoid generation of other problems during and after growth.

IV. CONCLUSION

Imparting knowledge of oral hygiene among parents and then children play a key role in maintaining healthy periodontium and early discovery of mucogingival deformities.

Surgical intervention should take in consideration the particularity of the periodontium of young age patients.

V. ACKNOWLEDGEMENTS

This work was carried out within the framework of “Pedagogic & Innovative Medico Dental English Certified Complementary Study”. In this occasion, we would like to show our gratitude to Mrs. Khadija Abdellatif, Dr. Asma Kassab, Mr. Samir Boukattaya and PrFaten Ben Amor for sharing their pearls of wisdom with us during the different modules.

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