



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



MONA MAGHRABY

Evaluation of the Effect of Injectable Platelet Rich Fibrin (I-PRF) on Interdental Papilla Reconstruction

Randomized Controlled Clinical Study

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

رَبِّ أَوْزَعْنِي أَنْ أَشْكُرَ
نِعْمَتَكَ الَّتِي أَنْعَمْتَ عَلَيَّ
وَعَلَى وَالِدَيَّ وَأَنْ أَعْمَلَ
صَالِحًا تَرْضَاهُ وَأَصْلِحْ
لِي فِي ذُرِّيَّتِي ^{صلى}إِنِّي تُبْتُ
إِلَيْكَ وَإِنِّي مِنَ الْمُسْلِمِينَ

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List of Abbreviations

Abb.	Full term
<i>CEJ</i>	<i>Cemento- enamel junction</i>
<i>CAD/CAM</i>	<i>Computer Aided Design/Computer Aided Manufacturing</i>
<i>CEREC</i>	<i>Chairside Economical Restoration of Esthetic Ceramic</i>
<i>EMP</i>	<i>Enamel matrix proteins</i>
<i>GBTs</i>	<i>Gingival black triangles</i>
<i>HA</i>	<i>Hyaluronic acid</i>
<i>IDP</i>	<i>Interdental papilla</i>
<i>I-PRF</i>	<i>Injectable platelet rich fibrin</i>
<i>IGF I-II</i>	<i>Insulin like growth factor</i>
<i>IPR</i>	<i>Interproximal reduction</i>
<i>LSCC</i>	<i>Low Speed Centrifuging Concept</i>
<i>MPPF</i>	<i>Modified papilla preservation flap</i>
<i>MSCs</i>	<i>Mesenchymal stem cells</i>
<i>PDGF</i>	<i>Platelet derived growth factor</i>
<i>PIS</i>	<i>Papillae index score</i>
<i>PPI</i>	<i>Papillae presence index</i>
<i>PRF</i>	<i>Platelet rich fibrin</i>
<i>PRP</i>	<i>Platelet rich plasma</i>
<i>RBCs</i>	<i>Red blood cells</i>
<i>SPPF</i>	<i>Simplified papilla preservation flap</i>
<i>SCTG</i>	<i>Subepithelial connective tissue graft</i>
<i>STL</i>	<i>Surface Tessellation Language</i>
<i>VEGF</i>	<i>Vascular endothelial growth factor</i>

REVIEW OF LITERATURE

Increasing public demand for esthetics places huge pressure on modern dentist to restore any lost ‘white’ and ‘pink’ esthetics. White esthetics denotes natural teeth and pink refers to gingival tissues surrounding the teeth. Balance between soft tissue and teeth adjacent to it with minimal or no tissue deficiencies is key for stable dentition (***Sharma and Park, 2010***).

The interdental space is the physical space present between two adjacent teeth, and its shape and volume are determined by the morphology of the teeth. The interdental papilla represents the gingival tissue that fills this space and is formed by dense connective tissue covered by oral epithelium and may be influenced by the height of the alveolar bone, distance between the teeth and interdental contact point (***Sharma and Park, 2010***).

Gingival black triangles (GBTs) are defined as the embrasures cervical to the interproximal contact that’s not filled by gingival tissues so they appear as black pyramidal spaces. The loss of the papilla can lead to cosmetic and functional problems. Loss of the papilla has a negative effect on individual smile as well as causing phonetic problems (the space allows passage of air and saliva) and food accumulation which can negatively affects the periodontal health (***Ziahosseini et al., 2014***).

Orthodontists considered a 2 mm open gingival embrasure less attractive than an ideal smile with normal gingival embrasure. Open gingival embrasures slightly greater than 3 mm were considered less attractive by both general dentists and the general population (*Kokich et al., 2003*).

Etiology of gingival black triangles (GBTs):

The etiology of GBTs is known to be multifactorial. They may be formed as a result of active periodontal disease that lead to recession, osseous surgeries, traumatic extraction, tooth brush trauma, decreased keratinization due to aging and changes in tooth alignment during orthodontic treatment. Other causes include interproximal distance of the roots, tooth malposition, interproximal bone height in relation to interproximal contact, gingival biotype and gingival contour **Figure (1)**.

In cases with **active periodontal disease**, periodontal pockets with probing depth more than 3mm will lead to an increase in plaque retention, inflammation and recession. As the resorption of alveolar crest progresses, the distance between the contact point and the alveolar bone crest increases. The end result is the loss of interdental papilla (*Zetu and Wang, 2005; Jamwal et al., 2019*).

Improper oral hygiene especially the improper use of dental floss leads to damage of supporting gingival tissues that leads to recession and papilla loss. A study reported that irrespective of manual or power tooth brushing, over or abusive brushing or force applied significantly harm the gingival tissues (*Addy and Hunter, 2003*).

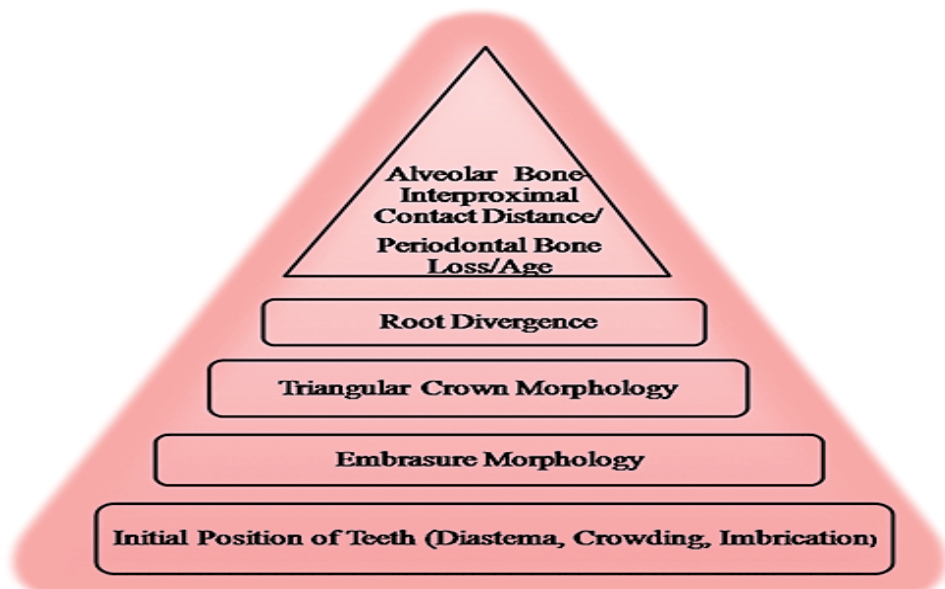


Figure 1: Hierarchy of risk factors for black triangle. Increasing levels of the pyramid pose a greater risk for black triangles (*Sharma and Park, 2010*).

Normally the **level of contact point** between the maxillary central incisors is the most coronal when compared to its location between other maxillary teeth in the esthetic zone. Therefore, the space filled by the papilla between the maxillary central incisors is the most visible and the largest. If the papilla is lost in such a location it will cause a critical esthetic problem which is difficult to be reconstructed (*Miller and Allen, 2000*).