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Mucogingival surgical techniques applied to implantology

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Friedman for the first time in 1957 developed the term "mucogingival surgery" combining just to teeth nowadays it will be related also to implantology focused on the management of soft tissues around implants prior, during or after the implant placement in order to achieve an optimum soft tissue amount which will provide a functional and aesthetic result for the surgeon and the patient. Analyzing the role of soft tissue management multiple opinions show differences about the role of keratinized tissue (KT) around the implant: Berglundh states that the use of KT to create a barrier against infections, Zarb & Symington not find correlation between the failure of the implant treatment and the presence of KT.

Follow Albrektsson and Wennström the presence of the keratinized tissue around the implant not influence the long-term survival rate but is highly recommended to achieve an easier plaque control, a better peri-implant soft tissue stability and better aesthetic-prosthetic result.

Primary objective: compare different mucogingival surgical techniques such as: free gingival graft (FGG), apical repositioned flap (ARF), coronal advanced flap (CAF) with or without connective tissue graft (CTG) and palatal roll envelop flap (PREF) in order to maintain or augment KT.

Secondary objective: compare the importance of the KT around the implant from an aesthetic and functional point of view.

The collection of articles for this essay was done entering to multiple scientific database such as: PubMed; Medline; American journal of periodontics; Journal of periodontal & Implant science; The official journal of the international congress of oral implantologists; Europe PMC and a lot more. In total the articles searched were 58; through the use of inclusion criteria: English language; human documented cases; mucogingival surgical techniques over implants; functional and aesthetic role of soft tissue around implants; 20 articles were eliminated from the first search reaching the total of 36 articles and one book.

Key words used during the searching process were: implants; mucogingival surgery; keratinized tissue. Four articles were from 1970 to 2000 and they were included into this project due to their high relevance provided; the rest of the articles, 32, were from the last 20 years.

The language selected for this essay was English.

In cases where the KT is present but less than 2 mm, six articles analyze the possibility of observing: loss of attachment; increment in plaque deposit; gum inflammation; recession easily generated; problems in implant stability.

One article states that KT is not important for the implant survival while another work analyzes the importance of patient's individualization.

ARF with graft (FGG): generate discomfort and higher chair time but higher KT amount; without graft: stent or FAST option, less discomfort low chair time.

FGG: prior to implant good predictability but high pain; long term treatment; multiple surgery areas. PREF: stable results, good aesthetic, no scars on buccal side and low discomfort. CAF: with vertical incisions produces vascularization problems, pain, swelling without vertical incisions better healing, less time surgery. CAF plus CTG Burkhadt states in 1 months 75% of coverage which will decrease in 3-6 months to 70-66% while Zucchelli achieves 75% of coverage 1.

The amount of KT around the implants is a very discussed topic regarding its functional and aesthetic action.
It's worth noting that better hygiene control, less recession and low loss of attachment are observed in following up period when KT is located around the implant.

Implant stability and its integration in the oral environment disguising natural dentition will achieve better outcome when KT is present.

Regarding the amount of KT 2 mm will be consider the right one to achieve all the condition described before.
Between the four different mucogingival procedures to preserve or regenerate KT described, there is not a technique which will work better than the others due to the fact that each patient need to be individualize respect to functional and aesthetic needs.

The personal knowledge of the surgeon, his/her experience developed along the time, the final outcome required by the patient, patient's financial resources will also play a role in the treatment plan.

Key-words: Implant; Mucogingival surgery; Keratinized tissue