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Finding Z: A mathematical formula to predict tissue displacement in grafted and non-grafted tissue around dental implant abutments

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The exposure of the abutment/restorative interface is a problematic consequence, especially in the dental esthetic zone of grafted and non-grafted tissue. Clinicians have always been cognizant of the relationship between the restoration emergence profile and the effect it has on the gingival tissue margin around that restoration. Increasing the emergence profile may cause tissue blanching initially and may lead to apical migration of the tissue long-term. This problem has become more apparent in the implant retained restorations, especially where premade or CAD/CAM abutments are utilized. To assist the clinician in designing the emergence profile, formulas to predict the resultant soft tissue of grafted and non-grafted areas in certain prosthetic positions have been developed. Critical to the formula use is to ensure that the tissue has matured. The formulas are less predictable in the Thin Biotype and the severely inflamed environment; while the formulas predict where the gingival margins will be positioned in these situations, they cannot predict how the soft tissue will respond. While an emergence profile that minimally displaces soft tissue is favorable, there are instances where the tissue needs to be supported even if it has been grafted. This is often due to palatal/lingual implant placement and/or soft tissue esthetic demands in matching the emergence of adjoining implants or with that of natural teeth. The formulas are based on the depth of tissue (X), from the beginning of the sulcular epithelium to the base of the implant and the emergence angle (α), defined by the horizontal change of distance (Y) from the straight line measurement of (X) as it exits the crevice. The vertical displacement of the gingival margin of grafted and non-grafted tissue vertically as it moves outward on the defined arc is Z. This presentation will present formulas to predict the vertical tissue position and displacement of the tissue of grated and non-grafted areas around the abutment/restoration. Clinical cases will also be shown.

Biography

Dean Vafiadis received his dental degree and Prosthodontic specialty training at New York University College of Dentistry. He is currently the Director of the Full-Mouth Rehabilitation CE course at NYU. He is an Associate Professor of Prosthodontics at NYU College of Dentistry. He has lectures nationally and abroad for NYU Continuing Education department. He has instructed over 9000 dentists with over 700 programs in the past 17 years. He has published and lectured on various topics such as Aesthetics, Implant designs, Cad/Cam and occlusion. He is a member of the ACP, AO, AAID, ICOI, AACD and the ADA.

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