Titanium Mesostructures for the Mandibular Resection Prosthesis_Oral Oncology Symposium 2022

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Fibula free flaps are the best choice when treating long span reconstructions as they could be cut and reshaped to mimic the recipient site. When it comes to a functional reconstruction where the patient can talk and chew, and swallow efficiently, several dental prosthetic treatment options have been prescribed throughout the years. Although fibulas and dental implants have success rates over 90%, the prosthetic success rate is relatively low; 42.9%.
Successful dental rehabilitation depends on local conditions such as range of mandibular movement, restorative space, opposing dentition, neurologic disturbances and functional deficiencies. Meanwhile a removable dental prosthesis (RDP) can compensate for a large vertical cantilevers it typically ends having limited chewing ability and retention when individual attachments are used, chronic wear of the abutment/attachment complex is always expected.
A titanium bar (Ti Bar) can compensate for an oversized restorative space for both RDP's and for fixed dental prostheses (FDP). For the bar retained removable dental prosthesis individual male type of abutments are tapped into the bar and the attachment system of choice is embedded in the intaglio of the removable prosthesis. It closely resembles the function of an FDP with the added benefit of improved oral hygiene. Mechanically it reduces the cantilever vertically and horizontally from the implants to the occlusal surface as the arm starts on top of the bar on not on the implants as with individual attachments.
Ti bars have become the mesostructure of choice for the Zirconia fixed dental prosthesis for large vertical cantilevers. When it is used to retain an FDP; it decreases the reconstruction overall weight and absorbs some of the chewing forces, sparing the implants from being overloaded.
CAD software allow for the design and mill of both TI bar and fixed prosthesis where superstructure portion of the prosthesis is cemented to the Ti bar and the bar/Zirconia bridge complex is screwed into the multiunit abutments. Quality of life is significantly improved with this treatment modality.