Digital Reconstruction and Interdisciplinary Cooperation in Surgical Design and Simulation - Novel Approaches in Reconstruction and Rehabilitation of Head & Neck Oncology Patients

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Management of head and neck cancer is increasingly being carried out with microvascular flaps to reconstruct both hard and soft tissue deficits. Functional oral rehabilitation for these patients has posed a real challenge to both Prosthodontists and Head & Neck Surgeons because of the complexity of the defects and the reconstructive requirements. The use of bone containing free flap transfer techniques has significantly improved jaw reconstruction but complete dental rehabilitation continues to be a challenge for this cohort of patients. One of the barriers to attain oral rehabilitation with osseointegrated implants is achieving accurate osteotomies and optimal insertion and positioning of the bone flaps. The advent of advanced digital technologies that could be used to plan the reconstructions, has allowed the surgery involving both hard and soft tissues transfers to be raised to new levels of precision and accuracy. These digital technologies have allowed convergence of imaging, digital surgical simulation for bone and soft tissue transfer and implant installation simulation. To achieve this level of sophistication in surgical reconstruction and oral rehabilitation for head and neck cancer patients, it is imperative that the management is a team affair of a group of highly trained specialists in various fields including Prosthodontics, Head and Neck surgery, Surgical design and simulation, dental lab technology among others. This presentation will share with the delegates, how our institution has achieved this interdisciplinary cooperation and how this collaboration achieves the end result.