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USE OF HUMAN TEETH AS AUTOGRAFT IN INTRABONY ORAL DEFECTS

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SUMMARY

Introduction: Reconstruction of lost tissues is a major goal of periodontal therapy. These reconstructions are achieved by various biomaterials that contribute to new bone formation through osteogenesis, osteoconduction or osteoinduction. While autografts are the gold standard they create morbidity at the donor site and have limited availability. With advancements in tissue engineering, researchers have sought alternatives to autografts, one such being human tooth from intraoral donor sites, due to its chemical similarities to bone.

The present study compares the clinical efficacy of freeze dried auto-tooth graft material prepared in the Tata Memorial Hospital (TMH) Tissue Bank from roots of extracted teeth, and demineralized freeze-dried bone allograft (DFDBA), a conventional allograft, in intrabony defects. Chorion membrane from the TMH Tissue Bank was used as a barrier membrane with both biomaterials.

Materials and Methods: Non-restorable teeth were extracted from screened donors. Roots were separated from extracted teeth. Each donors' roots were separately washed, processed and then freeze-dried. After processing them free flowing white granules were obtained. The granules were packed and terminally sterilized using a dose of 25 KGy. Comparison of the auto-tooth graft material and DFDBA was evaluated clinically and radiographically.

Results: Auto-tooth graft material underwent gradual resorption with good bone formation. There was reduction in probing pocket depth (PPD) and gain in clinical attachment level (CAL) with auto-tooth graft material which was comparable to DFDBA.

Conclusion: Auto-tooth graft material is an innovative biomaterial which has the potential to be used as a bone graft material in regenerative therapy. It addresses the patient's aversion to allograft and xenograft by providing excellent biocompatibility without causing an immune response. It is economical, natural, safe, and a clinically