Tooth and soft tissue response to occlusal distally-extended partial denture

The present work was carried out to evaluate the effect of occlusal reactive distal extension removable partial denture on the underlying supporting structures, clinically, cytologically and histopathologically. The subjects of this study were divided into two groups. Group (A) included patients with cobalt chromium conventional partial denture with PRI clasp system design. Group (B) included patients with the same design as those of group (A), but with the introduction of a resilient supersoft layer between acrylic artificial teeth annd rigid denture base (occlusal reactive partial denture). Each patient was examined clinically for plaque index, gingival index, tooth mobility, denture bearing area, before and after three months of denture use (for both groups). Cytological study for denture bearing area was made before and after three months of denture use. Histopathological study was done to show any mucosal alterations after denture wearing. The results obtained showed that although occlusal reactive partial denture showed good retention, stability, comfort, as well as better function, no apparent increase in abutment tooth mobility, less feeling of denture movement during function and non-function tooth contact, yet this denture also showed leaching out of some artificial teeth, increased plaque and gingival indices and more inflammatory response in denture bearing area. On the other hand, conventional partial dentures showed minor changes in plaque accumulation and gingival and mucosal inflammation. From this study one can conclude that conventional removable partial denture showed less gingival mucosal inflammation and plaque accumulation less than occlusal reactive partial denture which showed increased plaque and gingival indices. Mobility of the abutment teeth decreased in occlusal reactive partial denture than in conventional one. Cytological and histopathological studies confirmed that conventional removable partial denture preserved and stimulated the underlying supporting oral mucosa than occlusal-reactive partial denture that is recommended if there are maintenance and extensive care.