

Information regarding arch dimensions in human populations is important to clinicians in orthodontics, prosthodontics, and oral surgery. It also is of interest to anthropologists and other students of human oral biology. The aim of this study was to compare the transverse dimensions of the dental arches of Class III groups with a group of untreated normal occlusion subjects. This study was performed using measurements of dental casts of 41 Class III malocclusion (21 males and 20 females) and 50 normal Class I occlusion (25 males and 25 females), of Iraqi adult samples aged (14-24) in Hilla city. The dental and arch width dimensions measured were intercanine, intermolar, and molar alveolar in both arches were taken and independent-samples t-test was applied for comparing the groups. The finding from this investigated indicated that, (1) there are no significant differences in all measurements between Class I and Class III overall samples except for the maxillary molar alveolar width (UA6-6) are found to be significantly larger in Class I than in Class III overall samples and the mandibular intercanine width (L3-3) are found to be significantly larger in Class III than in Class I overall (2) there are no significant differences in all measurements between Class I and Class III male samples except for the mandibular intercanine width (L3-3) are found to be significantly larger in Class III than in Class I males (3) the lower intermolar width (L6-6) and the lower molar alveolar width (LA6-6) are significantly larger in Class III than in normal Class I female samples while the Class I are significantly larger than Class III females in the upper intercanine widths (U3-3) and in the upper molar alveolar width (UA6-6), whereas the lower intercanine widths (L3-3) and the upper intermolar width (U6-6) show no significant difference between normal Class I and Class III female samples (4) the upper intercanine widths (U3-3); the upper intermolar width (U6-6); and the lower intercanine widths (L3-3) are significantly larger in males than in females of Class III samples while the upper molar alveolar width (UA6-6); the lower intermolar width (L6-6); and the lower molar alveolar width (LA6-6) show no significant difference between males and females of Class III sample