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Preliminary osteometric study of orbital anthropometry in a Sri Lankan population

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Introduction and objectives: Orbital anthropometries are used in certain reconstructive craniofacial abnormalities, genetic counseling and in forensic medicine. Literature has shown that there is a significance difference in orbital Morphometry worldwide. Present study carried out to assess the Sri Lankan osteometric values of the orbit as no known published studies are available. To assess the variations in the anthropometric measurements of the bony orbit in a Sri Lankan population

Method: Twenty-seven(27) bony skulls obtain from Department of Anatomy FMS-USJP were measured using manual vernier calliper by two independent individuals for various anthropometric measurements, which each measurement was measured for three times and mean value was taken.

Results: Mean orbital height (3.21 ± 0.16 cm) was lesser than the mean orbital width (3.83 ± 0.28 cm) which was compatible with Indian literature available. Mean orbital index (MOI) varied from 0.84 ± 0.06 cm with half of the sample 50% (27/54) and 27.7% (15/54) belonged to the microsoma and megasoma categories respectively. Both categories had equal gender distribution and were higher than in the available literature. Microsoma and megasoma category was commonly right [59.3% (16/27)] and left [66.7%(10/15)] orbits respectively. Bi-orbital distance and Intra-orbital distance had a mean value of 9.51 ± 0.47 cm and 2.09 ± 0.36 cm respectively with equal gender distribution. Inter fronto-malare temporal mean distance was 10.91 ± 0.41 cm with no sex difference.

Conclusions: Orbital Morphometry is important to provide baseline data for ophthalmological and other surgeries on the face. Most of the findings in this study had similar but small variations to those of Indian(Karu et al,2012) and Caucasian(Weaver et al,2010) results. Further research work is needed to develop Sri Lankan reference values.