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CORRELATION OF AREA SIZE OF ORBITAL FLOOR DEFECT AND CHOICE OF IMPLANT MATERIAL

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SUMMARY

The thin bones of the orbital floor often fracture in trauma involving the midface, leaving a defect that needs to be reconstruted in order to restore its form and functions. Various implant materials have been used to bridge the gap, but factors contributing to the selection of one material over another has not been much illustrated. The aim of this study was to find the correlation between area size of orbital floor fracture and operator's choice of implant material in Hospital USM. A computer assessment of the area of the fracture was determined on CT scans taken from nineteen patients with unilateral orbital floor fracture. The CT images of these subjects were obtained from archived images from Picture Archiving and Communication System (PACS) server at the Radiology Department of Hospital USM. The area sizes of the orbital floor fracture were estimated from the CT imaging using Osirix Imaging Software Pixmeo SARL and recorded. The choice of implant material and complications with each implant material after surgical correction of orbital floor fracture were recorded from patient's treatment record. Data were analyzed statistically using Kruskal-Wallis test. The test–retest precision of measurement calculations was estimated using the Intraclass Correlation Coefficient (ICC) to assess the agreement across observers and across measures. Kruskal-Wallis test showed that there is no significant association between the area size of orbital floor fracture and operator's choice of implant material with $P>0.05$. The Intraclass Correlation Coefficient was 0.998. This study demonstrated that even though there was no statistically significant association between the area size of orbital floor fracture and operator's choice of implant material, the median showed that titanium was used for larger sized orbital floor defects, medpor for medium-sized and autograft for the smaller orbital floor defects.

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