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Diplopia and ocular motility in orbital blow-out fractures: Ten year retrospective study

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Objective: To investigate diplopia (binocular single vision [BSV] test) and ocular motility (uniocular field of fixation [UFOF] test) characteristics in blow-out fractures of the orbit and their value in fracture management.

Material & Methods: Patients with isolated blow-out fractures treated from 2000 to 2010 were included. BSV scores were stratified into three categories: low BSV category (0–60); moderate BSV category (61–80), and high BSV category (81–100). UFOF scores were also divided into three categories: low score (60–240), moderate score (241–270), and high score (271–365) categories.

Results: A total of 183 patients (106 surgically and 77 conservatively managed) met the inclusion criteria. There was no significant improvement in BSV postoperatively in surgically managed patients with preoperatively high BSV, whereas there was significant improvement ($p < 0.05$) for the high BSV category in the conservative group. Preoperative BSV was found to be significantly related ($p < 0.05$) to postoperative BSV, subjective diplopia outcome, follow-up time, and number of follow-up visits. However, improvement of BSV score in the surgical group was not found to be significantly correlated with subjective outcome in relation to diplopia. Preoperative UFOF score has no influence on subjective outcome in relation to diplopia. Surgical timing, approach, and choice of implant material were not found to be statistically related to final diplopia outcome, follow-up time, or number of follow-up visits.

Conclusions: BSV is better correlated with diplopia outcome, follow-up time, and number of follow-up visits than is UFOF. On the basis of this study, surgical intervention would not be recommended for blow-out fracture cases with BSV score $> 80\%$ for correction of diplopia alone.

Biography

Faaiz Alhamdani has his interest in Orbital Trauma. His work in orbital blow-out fractures during his PhD study in Newcastle University, UK, represents an attempt to provide a holistic management protocol for this type of injury. This work was published by Scholar Press in 2015. His work with his supervisors did not result in a suggested protocol for management of blow out fractures, but it shed the light on patients' experiences with this type of injury. This qualitative study on management outcome of this injury has complemented quantitatively based insight for its management.

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