Long term exophthalmometry changes after orbital decompression

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Introduction: Decompression surgery is generally effective in reducing proptosis in the short term. However, with fat deflation over time, changes in the peri-ocular soft tissue relationships would be expected to occur. Further, boney and soft tissue orbital surgery may affect the manner in which tissues age leading to long term changes in exophthalmometry over time. The purpose of this study was to examine these relationships in a cohort of TED patients followed for more than 5 years.
Methods: In this retrospective longitudinal observational study, patients who underwent orbital decompression surgery in one or both eyes over a 15 year period at a single institution were screened for study entry. Individuals with greater than 5 year follow up from the time of decompression surgery were included. Hertel data was collected at each follow-up visit. The relationships between time after surgery and exophthalmometry were examined for decompression and non-decompression eyes. Linear regression models were plotted.
Results: Non-decompression eyes did not demonstrate a significant main effect of time on overall exophthalmometry ($p>0.4$). Eyes in which a decompression was performed did demonstrate a modest negative main effect of time on hertel measurement ($p<0.05$) (Figure 1).
Conclusions: Orbital decompression leads to continuing improvement in proptosis after greater than five years of follow-up.