Spring 5-10-2021

RELATIONSHIP OF COMPUTER AIDED DESIGN(CAD)-BASED PHOTOGRAMMETRY FOR FACIAL DYSFUNCTION WITH FACIAL GRADING SYSTEMS FOR BELL'S PALSY: A PROSPECTIVE OBSERVATIONAL STUDY

Ankita Mehendale

RELATIONSHIP OF COMPUTER AIDED DESIGN(CAD)-BASED PHOTOGRAMMETRY FOR FACIAL DYSFUNCTION WITH FACIAL GRADING SYSTEMS FOR BELL'S PALSY: A PROSPECTIVE OBSERVATIONAL STUDY

Bell's palsy is a lower motor neuron lesion manifested by a sudden onset of ipsilateral facial muscle weakness. House Brackmann (HB) Scale, Sunnybrook Facial Grading Scale (SFGS) and Facial Disability Index (FDI) are frequently used traditional assessment tools for grading of facial function. The aim of this study was to assess the use of CAD-based Photogrammetry in measuring the facial dysfunction and its relationship with the above- mentioned scales through the time. The purpose of this study was to introduce a new objective measure for facial dysfunction in individuals with Bell's palsy. 25 subjects were included in this prospective observational study. Each subject was assessed using traditional facial grading scales i.e., HB scale, SFGS and FDI along with CAD-based Photogrammetry. The photographs of the patient's face at rest as well as while performing various facial expression were taken at the baseline and 1 month after the onset and were analysed by AutoCAD LT 2020 software. The results showed strong relationship among the dynamic expressions like raising of eyebrows, frowning, smile and snarl in CAD-based Photogrammetry and the respective variables of SFGS as well as FDI. However, no relationship was seen among CAD-based Photogrammetry and HB scale. The study concluded that CAD-based Photogrammetry is a sensitive tool to evaluate the dynamic expressions of the face in Bell's palsy patients.