

COMPARATIVE STUDY OF CONVENTIONAL OCULOPLASTIC

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Abstract

Motivation/problem statement: Oculoplastic evaluation of patients in OPD is a highly skilled and a demanding procedure which needs meticulous recording of measurements of various oculoplastic parameters. The evaluation has immense bearing on the treatment modality and managing the post operative sequelae. The procedure is done manually which obviates its subjective errors and time consumption which motivated us to pursue an alternative to the current gold standard practice. ImageJ is a public domain, Java-based image processing program developed at the National Institutes of Health. It was developed to solve many image processing and analysis problems, from three-dimensional live-cell imaging, to radiological image processing, multiple imaging system data comparisons to automated hematology systems. Image J is a freeware and easily accessible on the internet and which can be used to analyze and measure various oculoplastic parameters from the photographs of the patients.

Methods/procedure/approach

A prospective comparative study of oculoplastic evaluation was done in 30 patients using conventional manual method (Group A), photographs of patients from Canon Rebel XS SLR camera (Group B), photographs from 3.2 mp Samsung mobile phone (Group C). Corneal white to white diameter was measured using callipers which was later used as a reference value in the analysis of photographs. Oculoplastic parameters such as horizontal palpebral aperture (HA), vertical palpebral aperture (VA), marginal reflex distance 1 (MRD1) and marginal reflex distance 2 (MRD2), inter canthal distance (ICD) and in-

ter pupillary distance (IPD), outer canthal distance (OCD) were measured in all the patients and were compared between the groups. All photographs in Group B and C were shot with similar and standardized settings.

Results/findings/product

One way Anova test was done between the groups and all the oculoplastic parameters were compared. The p value of HA, VA, MRD1, MRD2, IPD and ICD was >0.05 and was not statistically significant, the p value of OCD < 0.05 and was statistically significant.

Conclusion/implications

Image J is an effective and accurate tool which can be used seamlessly in oculoplastic evaluation. This tool also helps in pre operative and long term post operative evaluation of ptosis surgeries and cosmetic eyelid surgeries. This tool helps to objectively evaluate by-passing the observer bias and as can also be used to plan the outcome of cosmetic surgeries. Efforts are underway into developing Image J into an android phone application so that tool can be used on our mobile phones making the process easy.

The western research philosophy says "publish or perish" which has made them to contribute immensely to our medical literature whereas in our subcontinent research takes a backseat in the pretext of humongous patient load in our opds and hospitals. Innovation and generous use of technology in our daily day to day practice can only help to improve our observation and attitude towards scientific research.