Motion analysis as a tool for the evaluation of oculoplastic surgical skill: evaluation of oculoplastic surgical skill.

Saleh GM, Gauba V, Sim D, Lindfield D, Borhani M, Ghoussayni S.

Frimley Park Hospital, University of Surrey, England.

Arch Ophthalmol. 2008 Feb;126(2):213-6.

Abstract

OBJECTIVE: To evaluate motion analysis as a discriminator of ophthalmic plastic surgical skill between surgeons of varying experience.

METHODS: Thirty subjects were divided into 3 groups based on surgical experience: novice (< 5 performed procedures; n = 10), intermediate (5-100 procedures; n = 10), and expert (> 100 procedures; n = 10). Detailed 3-dimensional motion data from surgeons performing 2 oculoplastic surgical tasks on a wet laboratory skills board were obtained using the Qualisys motion capture system. The first task was a deep 3-1-1 suture. The second was skin closure with a continuous suture. The main outcome measures were time, overall path length, and total number of movements. Kruskal-Wallis analysis was performed to evaluate statistical significance.

RESULTS: Highly significant differences were found during the skin closure task between all groups for mean time (P = .002), overall path length (P = .002), and number of movements (P = .001). For the deep stitch, highly significant differences were also found for time (P < .001), path length (P < .001), and number of movements (P < .001).

CONCLUSIONS: Motion analysis, using this technology, was able to differentiate between surgeons of varying experience performing oculoplastic tasks, thus demonstrating construct validity. This technique may be useful in the objective quantitative measurement of oculoplastic skill, with potential applications for training and research.

PMID: 18268212 [PubMed - indexed for MEDLINE]