Cerebral palsy (CP) is a non-progressive neurological disorder. Botulinum toxin is used as an effective adjunct to other treatment options to reduce spasticity in CP. 3-D gait analysis, an accepted method for outcome evaluation in CP treatment, was used to assess the efficacy of botulinum toxin.

Results

Joint angles and moments were obtained and reported as in Figure 2-3 and Table 1.

Discussion

Movements had not changed significantly. Statistically significant difference (p<0.05) was detected in the magnitude of left hip moment in segment 1 of stance phase following injection. There was significant change in the position of peak moments, changing the moment curve towards normal.

Methods and Materials

Average age of the patients was 9 years. Group 1- Ranges of movement of hip, knee and ankle were assessed in 3 dimensions, before and after injection in 15 patients. Group II- Joint moment changes in sagittal plane in three segments of stance phase were compared before and after botulinum injection in 13 patients. Segments 1 & 3 are double support. Vicon® motion system was used for gait analysis (Figure 1). Post injection assessment was done at a mean of 7 weeks after intervention. Paired t test was used for comparison of pre- and post-injection values.

Conclusions

Significant reduction in magnitude of left hip moment in first segment was noted. Significant change in position of peak moments in hip, knee and ankle. No clinically or statistically significant change in range of movements. Prospective, randomised, controlled trials with larger number of patients will give stronger evidence.

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