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PURPOSE:

The first aim of this study was to determine whether there was a difference on contact area between non-affected and affected fingers of hand after applying kinesio@tex on affected hand. The second aim of the study was to determine grasping-releasing speed after palmar kinesio@tex application on both hands of children with hemiparetic cerebral palsy.

MATERIALS AND METHODS:

25 children with hemiparetic cerebral palsy (16 right/9 left, 13 boys/12 girls, mean age 9.92) after the permission of the parents were participated to this study. Spasticity for wrist flexor, pronatorius, finger flexor muscles was evaluated with Modified Ashworth Scale and grasping function was assessed with Manuel Ability Classification System (MACS). Hand width was measured by diameter. Including criteria included in a- have mild spasticity or have normal tonus, normal intelligence or mild mental retardation which does not affect understanding test positions, b-to make at least massive grasping (up levels of the fifth level of MACS), c-to not have visual or hearing impair, d-to not have extra hand injuries limits grasping including musculoskeletal injuries, fractures etc., e-to not have thumb-in-palm deformity. Kinesio@tex (2.5 cm width, Y tape) was cut by measuring from palmar surface to dorsum of the hand. Tape's anchor was applied to support by palmar arch and web space. Tape's tails were applied over dorsum of hand in diagonal direction. The cylindrical objects with diameters 2.5 and 4, 5 cm were covered with paper. Finger paint was painted children's fingers' palmar surface. Finger contact area was painted on paper by grasping. Cylindrical objects which were grasped before and after taping to all children were calculated into stereological area as a measurement method. Grasping-releasing speed after 45minutes taping application was measured in 30 seconds with a circular object which diameter was 5 cm. Statistical analyses included in Paired Sample t-test for both hands before and after taping.

RESULTS:

Before taping, averages of non affected hands' contact area were greater than their affected hands' contact area. This difference was statistically meaningful ($p < 0,05$). After taping the affected hand, no statistically significant difference were found between non-affected and affected taped hand's contact area in right and left hemiparetic children ($p > 0,05$). There were significant difference in grasping-releasing speed after taping in both right and left hand ($p < 0,01$).

DISCUSSION:

This study showed that the contact area of affected hands was similar after kinesio@tex application. Finger contact area changed after taping during handling every three objects. Grasping and releasing function, grasping quality and posture of contact area of affected hand were significantly increased after Kinesio@tape application. In conclusion, Kinesio@taping for grasping in hand for children with hemiparetic cerebral palsy can be used in pediatric rehabilitation setting. We recommend that evaluation of hand function might be included to determine the effect of kinesio@taping according to the hand's functional level for further studies.

Key words: palmar kinesio@taping, grasping, hemiparetic cerebral palsy