

原著

後天性上斜筋麻痺における静的および動的な身体平衡機能の評価

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The Evaluation of Static and Dynamic Balance Function in Acquired Superior Oblique Muscle Palsy

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Abstract

We made analysis of static and dynamic balance function before and after orthoptic treatment in cases of acquired superior oblique muscle palsy, and we discussed whether this examination was significant as a quantitative evaluation. We examined ten patients with acquired superior oblique muscle palsy in the Orthoptic Clinic, Ophthalmology, Kawasaki Medical School Hospital. A static and dynamic balance function was measured by using the balance master (BM) before and after orthoptic treatment. As for a static balance function, the amount of patient posture deviation was quantitatively measured in each of the three conditions; with both eyes open, with both eyes closed and with visual feedback. As for dynamic balance function, path sway and

patient posture were examined at various gravity shifts toward the 8 targets positioned in an ellipse, the perimeter of which corresponded to 75% of the individual's limits of stability. The ocular function was measured with reference to ocular position, cyclodeviation, muscle balance and fusional area. As for the static tests, the amount of patient posture deviation decreased significantly ($p < 0.05$) after the treatment as compared to that assessed before the treatment with eyes open and eyes closed. As for the dynamic test, no significant change was observed in any of these variables before and after treatment. We consider that the improvement of visual function influenced a change in the activities of the proprioception. The BM is likely to be useful as an objective and quantitative examination to evaluate the change in the proprioceptive activities before and after the orthoptic treatment.

要約

後天性上斜筋麻痺の静的および動的な身体平衡機能を視能矯正前・後で分析し、定量検査としての有用性について検討した。川崎医科大学附属病院眼科視能矯正クリニックで視能矯正を施行した後天性上斜筋麻痺10例について、身体平衡機能測定装置Balance Master MPS-1102 (NeuroCom)を用い、視能矯正前・後に静的・動的平衡機能を測定した。静的平衡機能は開眼、閉眼および固視目標がある場合の3通りの条件で重心位置偏位量を分析した。動的平衡機能は先導視標にしたがって、中心から8方向の周辺視標に重心移動を行い、安定の限界を75%に設定して移動距離と重心位置偏位量を検討した。視機能は眼位、回旋偏位、診断的むき眼位、融像域などを測定した。その結果、後天性上斜筋麻痺の静的平衡機能検査において、視能矯正前に比較して視能矯正後は、開眼、閉眼時ともに重心位置の安定性が認められ、重心位置偏位量が有意に改善した($p < 0.05$)。また固視目標がある場合は、視能矯正前・後ともに重心位置偏位量が減少した。動的平衡機能検査においては、視能矯正後は移動距離および重心位置偏位量に改善が見られたが、有意な差は認められなかった。視能矯正後は後天性上斜筋麻痺の全例に視機能の改善があり、これが外眼筋自己受容器の活動性の変化に影響を与えたと考えられる。したがって、後天性上斜筋麻痺の静的および動的な身体平衡機能は、Balance Masterを用いて定量的に表わすことが可能であり、視能矯正前・後の客観的検査法としての有用性を認めた。
