Abstract of Thesis

Name (Lee Donghoon)	
Title	Effects of the physical properties of facial soft tissues on facial displacement during smiling in patients with repaired unilateral cleft lip with or without palate(口唇裂・口唇口蓋裂を有する患者において皮膚の物理特性が笑顔表出機能に与える影響)

Abstract of Thesis

Background. Patients with repaired unilateral cleft lip with or without palate (UCL±P) show dysmorphology and distorted facial motion which may cause a psychological problem. However, no report had clarified possible causative factors of distorted facial motion in patients with UCL±P. In this research, we hypothesized that physical properties of the scar and surrounding facial soft tissues affect facial displacement during smiling in patients with UCL±P. **Material and methods.** Three-dimensional (3-D) images at rest and during smiling, as well as facial physical properties (e.g., viscoelasticity), were recorded in patients with UCL±P (Cleft group) and healthy adults (Control group). Differences between two groups in physical properties and facial displacement during smiling were examined. To examine the relationship between facial surface displacement during smiling and physical properties, the Cleft group was mathematically subcategorized into three subgroups based on their physical properties. Differences in physical properties and facial displacement among subgroups were examined. **Results.** The Cleft group showed a significantly less displacement of facial soft tissue with more asymmetry than the Control group. The elastic modulus of the scar was greater than that of normal skin, indicating stiffer tissue. The subgroup with a greater viscoelasticity of scar than the other two subgroups showed restricted displacement of the facial soft tissue. **Conclusion.** Physical properties of the scar and surrounding facial soft tissue affected facial displacement in patients with UCL±P.

様式７

論文審査の結果の要旨及び担当者

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論文審査の結果の要旨

本研究は，口唇裂・口蓋裂を有する患者において，笑顔表出時の顔表面の三次元変化量を定量的に検討し，さらに，皮膚表面の物理特性がその三次元変化量に与える影響を調べた研究である．

本研究より，皮膚表面の物理特性が笑顔表出時の顔表面の三次元変化量に影響を及ぼしている可能性が示唆された．

本研究の結果は，口唇裂・口蓋裂を有する患者における表情の形態的な歪みと皮膚表面の物理特性との関連性に関する初めての科学的根拠であり，今後，患者により良い治療を提供するための臨床研究を行う上で，非常に有用である．よって，博士（歯学）の学位論文として価値のあるものと認める．