Indeks perubahan jaringan lunak profil fasial lateral pasca perawatan ortodontik (kajian sefalometri lateral standar terhadap faktor risiko yang berpengaruh) = Index of lateral facial soft tissue profile alteration after orthodontic treatment (study of the role of risk factors on dtandard lateral cephalometric radiograph

Rini Susanti, author

Abstrak

Perawatan ortodontik terus berkembang seiring dengan perkembangan tuntutan masyarakat. Fasial merupakan bagian yang penting bagi manusia, demikian pula dengan profil fasial sehubungan dengan kebutuhan estetis. Pertimbangan perawatan ortodontik terkait erat dengan perubahan jaringan lunak profil fasial. Dibutuhkan perangkat yang relatif sederhana dan terjangkau secara luas untuk memprakirakan perubahan fasial dan menjelaskannya kepada pasien.
Tujuan: Memperoleh cara memprakirakan perubahan jaringan lunak profil fasial pasien pasca perawatan ortodontik yang terjangkau secara luas.
Tempat dan Waktu: Penelitian dilakukan di Departemen Ortodonti dan Klinik Radiologi Kedokteran Gigi, Rumah Sakit Gigi dan Mulut, Fakultas Kedokteran Gigi Universitas Indonesia, Jakarta, bulan November 2010 sampai dengan September 2011.
Metode: Radiograf sefalometri lateral standar sebelum dan sesudah perawatan dari 133 paseien pasca perawatan ortodontik sejak tahun 1995 sampai dengan tahun 2005, yang diambil secara konsekutif. Penelitian dilakukan dalam dua tahap, yaitu penelitian pendahuluan pada 29 radiograf sefalometri untuk mengevaluasi keandalan (reliability) pengukuran dan kesahihan (validity) metode pengukuran menggunakan uji Bland-Altman. Penapakan dan pengukuran terhadap landmarks dilakukan secara manual pada radograf sefalometri analog dan secara digital pada radiograf sefalometri yang telah didigitasi menggunakan alat pindai Medi 2000. Penapakan dan pengukuran secara manual menggunakan pinsil mekanik dan kaliper digital, serta piranti lunak Adobe Photoshop Extended CS4 untuk penapakan dan pengukuran digital. Penelitian kedua untuk memperoleh formula indeks perubahan jaringan lunak profil fasial lateral, melalui analisis uji t, analisis korelasi dan regresi linier terhadap landmarks jaringan lunak, jaringan keras, ketebalan jaringan lunak, posisi gigi, serta faktor risiko terkait. Selanjutnya dilakukan uji manova untuk memperoleh indeks tiap titik jaringan lunak profil fasial setelah perawatan ortodonti.
Hasil: Uji reliabilitas dan validitas pengukuran pada penelitian pendahuluan menunjukkan tidak terdapat perbedaan bermakna antara pengukuran manual dan digital. Pada penelitian kedua terdapat perubahan pada landmarks jaringan lunak: Labrale superior, Stomion superior, Stomion inferior, Labrale mental, dan Pogonion. Pada komponen dento-kraniofasial terdapat perubahan pada: jaringan keras titik A, ketebalan Labrale superior, ketebalan Pogonion, posisi geligi insisif sentral atas, insisif sentral bawah, molar atas dan molar bawah. Dari analisis regresi linier diperoleh formula indeksperubahan jaringan lunak profil fasial lateral pasca perawatan ortodontik. Dari uji manova diperoleh formulasi indeks perubahantiap titik yang berpengaruh terhadap perubahan jaringan lunak profil fasial.
Kesimpulan: Indeks perubahan jaringan lunak profil fasial pasca perawatan ortodontik dapat dilakukan melalui pengukuran radiograf sefalometri yang telah didigitasi, dengan menggunakan piranti lunak yang

tersedia secara umum, menggunakan formulasi hasil analisis terhadap jaringan lunak, komponen dento-kraniofasial, komponen karakteristik dan komponen perawatan. Indeks ini dapat digunakan secara luas, sekaligus untuk menjelaskan perubahan jaringan lunak pada pasien.
.....Orthodontic treatment continues to develop along with the community demand. Facial is an important part of human body, as well as facial profile with respect to aesthetic needs. Orthodontic treatment considerations are associated with changes in soft tissue facial profile. It requires a relative simple and easy method to predict changes in patient?s facial profile and to explain possible treatment result to the patient. Objective: The aim of this study is to obtain the method to predict patient?s facial profile soft tissue changes after orthodontic treatment.
Time and place of study: The study was conducted at the Department of Orthodontics and the Dento-maxillofacial Radiology Clinic, Dental Hospital, Faculty of Dentistry, Universitas Indonesia, Jakarta, from November 2010 to September 2011.
Method: Good quality standard lateral cephalometric radiographs before and after treatment of 133 patients who had completed the orthodontic treatment from 1995 until 2005, were consecutively taken from the medical records. The study was conducted in two stages. The preliminary study on 29 radiographs that aimed to evaluate the reliability and the validity of measurement as the intra and inter observer agreement value, using the Bland-Altman test. Tracing of landmarks and measurements are carried out manually and digitally on lateral cephalometric radiograph that had been digitized using the Medi2000 scan tool. Tracing and measurements manually using mechanical pencil and digital calipers. Digital tracing and measurements were performed by the image-editing using the Adobe Photoshop CS4 Extended software. The second as the main study was to obtain index of the lateral soft tissue facial profile, using t test, correlation analysis, and linear regression analysis of the soft and hard tissue landmarks, the soft tissue thickness, position of the teeth, as well as the related risk factors. Manova test were then performed to obtain the index of each soft tissue facial profile landmark points after treatment.
Results: Reliability and validity test of the measurements on preliminary research showed no significant differences between the manual and digital measurements. In the main study there were changes of the soft tissue landmarks: superior Labrale, Stomion superior, Stomion inferior, Labrale mental, and Pogonion. In the dento-craniofacial components there were changes in: hard tissue A-point, the thickness of the Superior Labrale, Pogonion thickness, position of the upper and lower central incisivus, upper and lower anchorage molars. The index of the lateral soft tissue facial profile changes after orthodontic treatment, the index of the lateral soft tissue facial profile landmark points during treatment were obtained. The manova test on the twelve landmark points were then performed to obtain the index of the each soft tissue facial profile points.
Conclusions: The index of the soft tissue facial profile after fixed orthodontic treatment could be acquired from digitized lateral cephalometric radiograph, using the available and common image editing software. The index formulation consist of the analysis of the soft tissues, dento-craniofacial components, characteristics components and treatment components. This index could then be used widely, as well as be used to explain the possible alterations in soft tissue after orthodontic treatment to the patient.