

Karakteristike mekotkivnog profila kod pacijenata sa III skeletnom klasom

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Characteristics of soft tissue profile in patients with skeletal class III

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KRATAK SADRŽAJ

Uvod: Kod pacijenata sa dijagnostikovanom III skeletnom klasom uočavaju se značajne promene u izgledu struktura mekotkivnog profila.

Cilj: Osnovni cilj ovog proučavanja je bio da se utvrde karakteristike mekotkivnog profila pacijenata sa dijagnostikovanom III skeletnom klasom i da se proceni postoje li statistički značajne varijacije u izgledu mekotkivnog profila u odnosu na pacijente bez skeletnih odstupanja u sagitalnom pravcu.

Subjekti i metode: Ispitivanjem je obuhvaćeno 20 pacijenata Klinike za ortopediju vilica Stomatološkog fakulteta u Beogradu. U ispitivanom uzorku prosečna starost pacijenata bila je 8 godina i 5 meseci. Uzorak je obuhvatio 13 devojčica i 7 dečaka. Promene u strukturama mekotkivnog profila utvrđene su u okviru dijagnostičkog postupka kliničkim pregledom, analizom fotografije i profilnog telerendgen snimka. Kliničkim pregledom određen je tip profila lica, karakteristike usana, facijalna harmonija u vertikalnom pravcu i ugao nagiba mandibulame ravni. Na profilnom telerendgen snimku analizirani su parametri sagitalnog pravca SNA, SNB i ANB, kao i parametri mekotkivnog profila po Schwarzu, Rickettsu i Holdawayu.

Rezultati: Postoje značajna odstupanja u vrednostima parametara mekotkivnog profila koja su direktna posledica postojeće sagitalne skeletne neusaglašenosti. Statistička značajnost uočenih razlika prisutna je na nivou $p < 0.01$ i $p < 0.05$

Zaključak: Izvršene analize ukazuju da pacijenti imaju tipičan konkavan profil, pri čemu, u većini slučajeva, meko-tkivne strukture svojim položajem ne kompenzuju postojeću skeletnu nepravilnost.

Ključne reči: III skeletna klasa; meko-tkivni profil lica; profilni telerendgen snimak; estetika

SUMMARY

Introduction: Patients with skeletal class III have typical characteristics of soft tissue profile.

Aim: The aim of this study was to determine characteristics of soft tissue profile in patients with skeletal class III and to find possible significant differences between these patients and patients in the control group (without malocclusion in sagittal direction).

Methods: Twenty patients of the Department of Orthodontics, Belgrade School of Dentistry, were included in this study. Average age in this group was 8 years and 5 months. In experimental group there were 13 girls and 7 boys. Changes in soft tissue profile by clinical examination, photographic and cephalometric analysis were determined during the whole diagnostic procedure. In the clinical examination, type of profile, characteristics of lips, facial harmony in vertical direction and the angle of mandibular plane were analysed. On lateral cephalometrics, the following parameters were measured and analysed: sagittal parameters SNA, SNB and ANB and parameters in Schwarz, Ricketts and Holdaway analysis of soft tissue profile.

Results: Patients in the experimental group had significantly different changes in soft tissue profile. It was the consequence of existing skeletal malocclusion in sagittal direction. Statistically, differences were significant ($p < 0.01$)

Conclusion: Measurements and analysis showed that patients had typical severe concave profile. Most often, the position of soft tissue structures did not compensate skeletal anomalies.

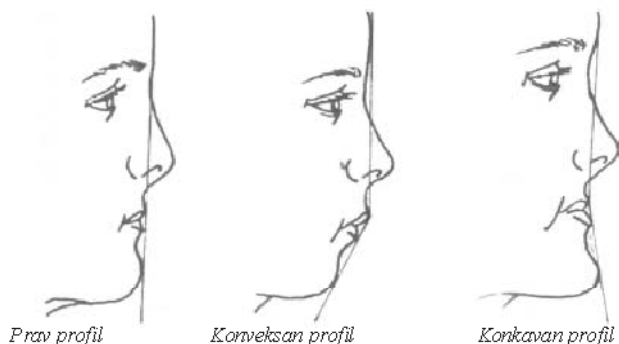
Key words: skeletal class III; soft tissue facial profile; lateral cephalometric; esthetics

U savremenoj ortodontskoj praksi jedan od osnovnih ciljeva je stvaranje što je moguće boljih dentoalveolarnih i skeletnih odnosa u okviru prihvatljive estetike lica, uz stabilnost postignutih terapijskih rezultata. Ortodontska terapija ne podrazumeva postizanje pravilnog, linijskog rasporeda zuba u intaktnim zubnim nizovima uz maksimalno dobru interkuspidaciju ukoliko je to postignuto na račun neprihvatljive promene proporcija i estetike lica^{1,2}.

Da bi se mogla sprovesti uspešna ortodontska terapija neophodna je sveobuhvatna i kompletna ortodontska dijagnostika. U okviru dijagnostičke procedure, neophodan je klinički pregled, analiza profilnog telendgen snimka i analiza fotografije³.

Cilj kliničkog pregleda je da se analizom profila lica utvrde međusobni odnosi struktura lica i eventualne disharmonije. Pažljivo ispitivanje profila daje veoma važne informacije, naravno, manje precizne nego analiza profilnih kefalometrijskih snimaka. Iz tog razloga se analiza profila lica u okviru kliničkog pregleda naziva "kefalometrijskom analizom siromaha"^{3,4}.

Analizom lateralne fotografije može se proceniti tzv. divergencija lica. Analizira se inklinacija između linije koja spaja čelo sa granicom gornje usne i linije koja spaja granicu gornje usne i mekotkivni pogonion (Pg'). U zavisnosti od odnosa ove dve linije diferenciraju se tri tipa profila (Slika 1): prav, konveksni (posteriorna divergencija karakteristična za II skeletnu klasu) i konkavni (anteriorna divergencija karakteristična za III skeletnu klasu) profil^{4,5}.



In contemporary orthodontic practice, two basic goals are creating the best possible dentoalveolar and skeletal relationships as part of satisfactory facial esthetics and sustainability of achieved therapeutic results. Orthodontic therapy does not imply regular, linear distribution of teeth in intact dental arches with full intercuspidation if it distracts facial proportion and esthetics.^{1,2}

For a successful orthodontic therapy, it is necessary to undertake comprehensive and complete orthodontic diagnostics. Diagnostic procedure includes clinical examination, photographic and profile cephalometric analysis.³

The aim of the clinical examination is to determine the relationship of facial structures and possible disharmonies by facial analysis. Careful profile examination offers very important information, of course, less precise than profile cephalometric analysis. Because of that, profile examination is called "cephalometric analysis of the poor".^{3,4}

Lateral photograph analysis is convenient for determining the so-called facial divergency. The inclination between the line connecting the forehead and upper lip and the line connecting the upper lip and soft tissue pogonion (Pg') is analyzed and 3 types of profiles can be differentiated: straight, convex (posterior divergency characteristic for skeletal class II) and concave (anterior divergency characteristic for skeletal class III)^{4,5}

Slika 1. Tipovi profila lica
Figure 1. Facial profile types

Konkavni profil sugerise odnos III skeletne klase. Mekotkivni profil utiče na fizionomiju lica, ali on ne mora uvek i da projektuje anteroposteriorni odnos skeletnih struktura koje se nalaze ispod njega, što je uslovljeno delovanjem različitih egzogenih i endogenih faktora⁶.

Najpouzdanija metoda kojom možemo uraditi analizu skeleta i mekih tkiva lica je profilni kefalometrijski snimak. Njime možemo dobiti najtačnije podatke o razvijenosti vilica, njihovom međusobnom odnosu i eventualnim disharmonijama⁷.

Pri utvrđivanju skeletne klase potrebno je proceniti položaj svake vilice ponaosob u sagitalnom pravcu i ustanoviti koja vilica, odnosno nerazvijenost ili prerazvijenost koje vilice je dovela do malokluzije tj. II ili III skeletne klase^{3,8}.

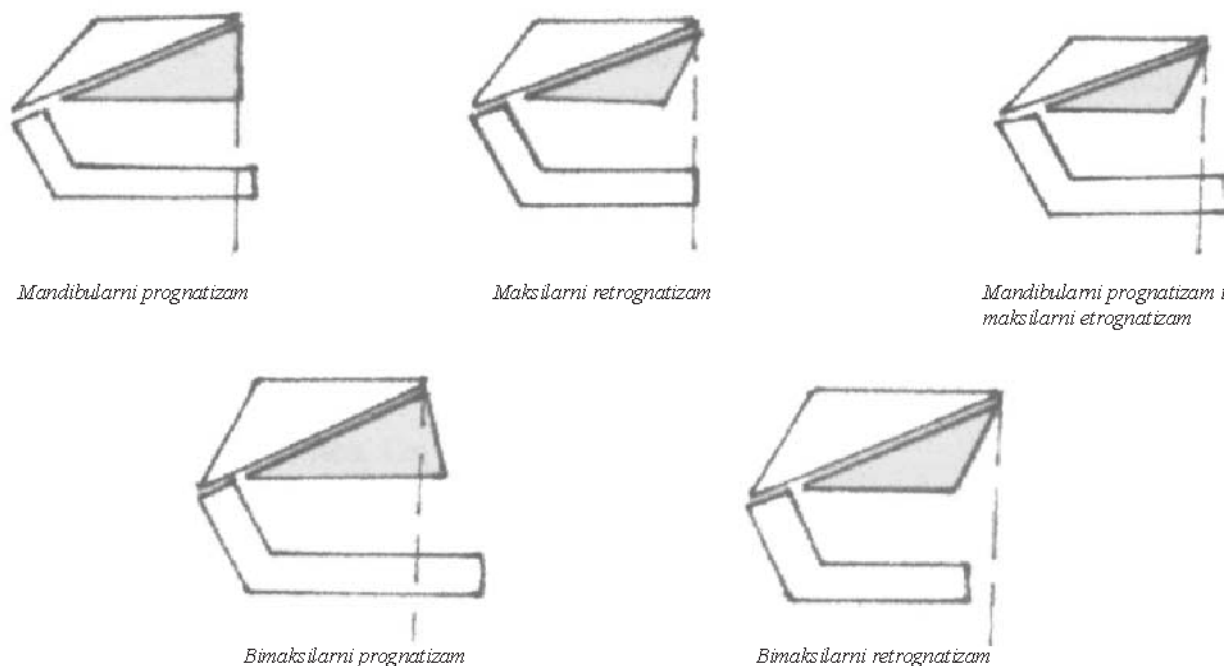
Concave profile implies the skeletal class III relationship. Soft tissue profile influences facial physiomy, but it need not always reflect the anterior-posterior relationship of the underlying skeletal structures. This is influenced by different exogeneous and endogeneous factors.⁶

The most reliable method for skeletal and facial soft tissue analysis is the profile cephalometric analysis. It offers the most valid data on jaw development, their relationship and possible disharmonies.⁷

In order to determine skeletal class, it is necessary to evaluate the position of each jaw in the sagittal direction and determine which of them causes malocclusion (i.e skeletal classes II and III) due to its hypo- or hyper-growth.^{3,8}

Skeletna III klasa, mezijalni zagrižaj, kod većine pacijenata zahteva kombinovani ortodontsko hirurški tretman, ali je kod ove malokluzije veoma bitno utvrditi da li se radi o prerazvijenosti mandibule (prava progenija) ili je maksila nedovoljno razvijena (pseudo progenija) (Slika 2). Drugi slučaj, za razliku od prvog, uspešno se leči ortodontskim aparatima.

Skeletal class III, mesial bite, requires a combined orthodontic-surgery treatment in most patients, but it is necessary to determine if there is a mandibular over-growth (real progenia) or a maxillary under-growth (pseudo progenia). The latter case, in contrast to the former, is successfully treated with orthodontic devices.



Slika 2. Varijacije položaja maksile i mandibule kod skeletno III klase
Figure 2. Variations in the position of maxilla and mandible in skeletal class III

Zbog svega navedenog, neophodno je da se procene odnosi mekih tkiva i čvrste koštane podloge koju ona prekrivaju, radi utvrđivanja nepravilnosti koje se reflektuju na licu, ali i radi procene kako će se korekcija dentoalveolarnih i skeletnih nepravilnosti odraziti na mekim tkivima. Meka tkiva izgrađena su od epitela, veziva i mišića, varijabilne su strukture, u zavisnosti od pola, uzrasta i postojećih ortodontskih nepravilnosti. Dentoskeletni odnosi uslovljavaju izgled mekotkivnog profila i, obrnuto, varijacije rasporeda i položaja struktura meko-tkivnog profila mogu prikriti (kompenzovati) nepravilne dentoskeletne odnose⁹.

Ako se ortodontski tretman usmeri samo na dentoalveolarne i skeletne strukture to može rezultirati povećanjem disharmonije lica ili može izazvati novu disharmoniju.

Analizom samo skeletnih struktura teško je proceniti oblik lica, već se samo direktnom analizom može proceniti odnos mekih tkiva i koštane baze. Pri tome se obično analizira profil, ne zato što frontalni izgled nije važan ili je manje važan, već zato što se većina dentofacijalnih anomalija, kao i promene nastale u toku terapije jasnije uočavaju na profilu^{3,4,10,11}.

Therefore, it is important to evaluate the relationship between soft tissues and firm bone support underneath, in order to detect reflecting facial irregularities and evaluate how the dentoalveolar and skeletal corrections will reflect on soft tissues. They are formed from epithelium, connecting tissue and muscles, variable in structure depending on the gender, age and existing the orthodontic anomaly. Dentoskeletal relationship influence the soft tissue profile and vice versa.⁹ If the orthodontic treatment is aimed only at dentoalveolar and skeletal structures, it can result in decrease in facial disharmony or can cause a new one.

It is difficult to determine the facial profile using only skeletal structure analysis. Only through a direct analysis, the relationship between soft tissues and the supporting bone can be evaluated. The profile is most frequently analyzed, not because the frontal appearance is irrelevant or less relevant, but because most dentofacial anomalies and therapeutic changes are clearly visible in the profile.^{3,4,10,11}

Cilj rada je bio da se kod pacijenata sa dijagnostikovanom III skletnom klasom (smanjena vrednost ugla ANB) utvrde osnovne karakteristike parametara mekotkivnog profila i da se proceni postoje li statistički značajna odstupanja u izgledu mekotkivnog profila između ovih pacijenata i pacijenata sa I skletnom klasom (bez odstupanja u sagitalnom pravcu).

Subjekti i metode

Ovim istraživanjem obuhvaćeno je 20 pacijenata Klinike za ortopediju vilica Stomatološkog fakulteta u Beogradu kod kojih je dijagnostikovana III skeletna klasa (mezijalni zagrizač). Prosečna starost pacijenata u ispitivanoj grupi bila je 8 godina i 5 meseci. U ispitivanoj grupi bilo je 13 devojčica i 7 dečaka. Kod svakog pacijenta pre otpočinjanja ortodontskog tretmana uradjen je klinički pregled, analiza profilnog telerendgen snimka i analiza fotografije.

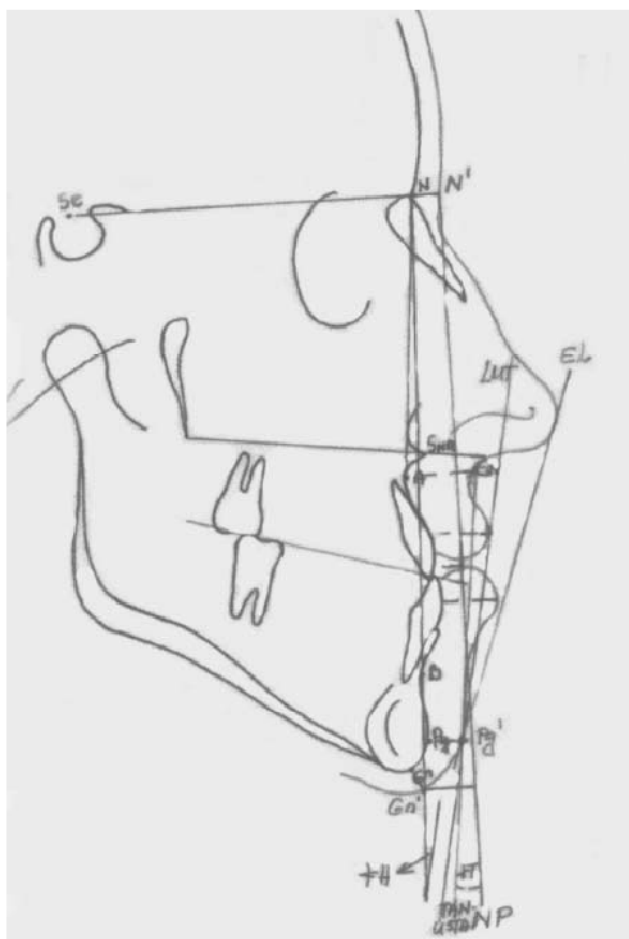
Analiza profilnog telerendgen snimka obuhvatila je merenje i tumačenje sledećih parametara (Slika 3):

The aim of the study was to determine characteristics of soft tissue profile in patients with skeletal class III and to find possible significant differences between these patients and patients with skeletal class I (without malocclusion in sagittal direction).

Subjects and methods

Twenty patients of the Department of Orthodontics, Belgrade School of Dentistry, with the diagnosis skeletal class III were included in this study. Average age in this group was 8 years and 5 months. In the studied group there were 13 girls and 7 boys. Clinical examination, photographic and profile cephalometric analysis were done for each patient before deciding on the necessary orthodontic therapy.

The profile cephalometric analysis included measuring and analyzing the following parameters:



Slika 3. Kefalometrijska analiza mekotkivnog profila
Figure 3. Profile cephalometric analysis of soft tissue profile

- a) za procenu sagitalnih medjuviličnih odnosa i položaja gornje i donje vilice uglovi SNA, SNB i ANB
- b) Metoda po Schwarzu
- ugao J
 - ugao T
 - debljina gornje usne
 - debljina donje usne
 - debljina brade kod tačke Gn
 - debljina brade kod tačke Pg
 - analiza vertikalnog položaja gornje i donje usne i brade u odnosu na NP (nasion perpendiculare)
- c) Metoda po Rickettsu
- položaj gornje i donje usne u odnosu na EL (estetska linija)
 - visina gornje usne
 - odnos linije kontakta usana i okluzalne ravni
- d) Metoda po Holdawayu
- Ugao H

Analizom fotografije procenjen je tip profila lica korišćenjem tri referentne ravni (frankfurtska horizontala tragus-orbitale, normala iz kožne tačke nasion po Dreyfussu i normala iz tačke orbitale po Simonu).

Na osnovu toga utvrđeno je da li se radi o pravom profilu (prosečno, anteriorno ili retro lice), konveksnom profilu (prosečno, anteriorno ili retro lice) ili konkavnom profilu (prosečno, anteriorno ili retro lice).

U okviru statističke obrade dobijenih rezultata određeni su srednja vrednost, standardna devijacija i koeficijent varijacije, a pomoću t-testa utvrđena je značajnost razlika u poredjenju sa standardnim vrednostima.

Rezultati

Kod svih pacijenata (100%) dijagnostikovano je smanjenje ugla ANB, što ukazuje na skeletno III klasu. Etiologija mezijalnog zagrižaja u ispitivanom uzorku bila je različita: kod 4 pacijenta (20%) prisutan je bimaksilarni retrognatizam sa dominacijom retrognatizma maksile, kod 6 pacijenata (30%) postojao je pseudoprogeni zagrižaj uslovljen maksilarnim retrognatizmom, kod 8 pacijenata (40%) pravi progenerni zagrižaj uzrokovan mandibularnim prognatizmom i kod 2 pacijenta (10%) bimaksilarni prognatizam sa dominacijom prognatizma mandibule.

Svi pacijenti imali su konkavan profil, što ukazuje da vilice nisu bile postavljene proporcionalno u postero-anteriornom pravcu, sa tendencijom povećanja ugla između mandibularne ravni i osnovne ravni prednje kranijalne baze. Kod 6 pacijenata (30%) usne su bile kompetentne, kod 10 (50%) potencijalno kompetentne, a kod 4 pacijenta (20%) inkompetentne.

Kod pacijenata sa III skeletnom klasom maksila je pokazivala tendenciju rasta unapred, bez statistički značajnih odstupanja u odnosu na standardnu vrednost ($p > 0.05$). Istovremeno, ugao pozicije lica (ugao T) nije pokazivao

- a) angles SNA, SNB and ANB .
- b) the Schwarz method:
- Angle J
 - Angle T
 - Upper lip thickness
 - Lower lip thickness
 - Chin thickness in Gn point
 - Chin thickness in Pg point
 - The analysis of vertical position of both lips and the chin in relation to NP (nasion perpendiculare)
- c) the Ricketts method:
- The position of upper and lower lip in relation to EL (esthetic line)
 - Upper lip height
 - The relationship of the lip contact line and the occlusal plane
- d) the Holdaway method:
- Angle H

Photographic analysis was used to determine the facial profile type according to the reference planes (frankfurt horizontal tragus-orbitale, Dreyfuss normal from the skin point nasion and Simon normal from the point orbitale).

According to these parameters and measurements, the profile was defined as straight (average, anterior or retro face), convex (average, anterior or retro face) or concave (average, anterior or retro face).

As part of the statistical analysis, the mean value, standard deviation and the coefficient of variation were calculated, whereas the significance of results was determined using *t*-test.

Results

The decrease of the angle ANB was diagnosed in all patients (100%) indicating skeletal class III. The etiology of mesial bite differed: 4 patients (20%) had bimaxillary retrognatism with dominant maxillary retrognatism, 6 patients (30%) had pseudoprogenic bite caused by maxillary retrognatism, 8 patients (40%) had real progeneric bite caused by mandibular prognatism and 2 patients (10%) had bimaxillary prognatism with dominant mandibular prognatism.

All patients had a concave profile indicating that the jaws were not positioned proportionally in the anterior-posterior direction with a tendency of increase in the angle between mandibular plane and basic plane of the cranial base. Six patients (30%) had competent lips, 10 patients (50%) had potentially competent lips while in 4 patients (20%) they were incompetent.

In patients with skeletal class III, the upper jaw showed a tendency to grow forward, but with no significant deviations from the average value ($p > 0.05$). In the same time, the angle T did not show deviations from the average value ($p > 0.05$) which implied dishar-

odstupanja u odnosu na standardnu vrednost ($p > 0.05$), što je govorilo o neusaglašenosti mekotkivnih i skeletnih struktura kod ovih pacijenata (Tabela 1).

Utvrđene su promene u debljini struktura mekotkivnog profila kod pacijenata sa III skeletnom klasom. Debljina gornje usne i subnazalnog predela pokazivala je povećanje u odnosu na standardnu vrednost ($p < 0.05$), dok je debljina donje usne i brade bila neznatno povećana u odnosu na standard i bez uticaja na facijalnu estetiku ($p > 0.05$) (Tabela 2).

Gornja usna je bila značajno pomerenjena unazad u odnosu na estetsku EL liniju ($p < 0.01$) što je doprinisilo izgledu konkavnog profila. Udaljenost donje usne je, takođe, bila povećana, na nivou statističke značajnosti $p < 0.05$, kao i visina gornje usne $p < 0.05$ (Tabela 3).

Ispitivanje korelacije uglova H i ugla ANB ukazalo je na značajna odstupanja. Ugao H je bio statistički značajno smanjen ($p < 0.01$), kao i vrednost ugla ANB ($p < 0.01$) u odnosu na standardne vrednosti. Promena vrednosti ugla ANB nije odgovarala postojećim vrednostima ugla H tako da nisu bili ispunjeni uslovi postizanja zadovoljavajuće facijalne estetike (Tabela 4).

mony between soft tissue and skeletal structures in these patients.

Changes in the thickness of soft tissue profile structures were recorded in patients with skeletal class III. The thickness of the upper lip and subnasal region showed significant deviation from the average value ($p < 0.05$) while the thickness of the lower lip and the chin was insignificantly greater than standard values with no influence on facial esthetics ($p > 0.05$).

The upper lip was significantly more retracted backwards in relation to the ethetic EL line ($p < 0.01$) contributing to the concave profile. The distance of the lower lip as well as the height of the upper lip were significantly greater ($p < 0.05$).

The analysis of angles H and ANB correlation pointed to significant discrepancies. Angle H was significantly smaller ($p < 0.01$) as well as the angle ANB value in comparison to standard values. The change in the values of angle ANB did not match the values of angle H and, therefore, the conditions for satisfactory facial esthetics were not fulfilled.

Tabela 1. Vrednosti uglova J i T kod pacijenata sa III skeletnom klasom

Table 1. Angles J and T values in patients with skeletal class III

Parametar	Srednja vrednost	SD	Koeficijent varijacije	Standardna vrednost	t-test
J	86,44°	3,08	0,04	85°	$t > 0.05$
T	10,19°	4,17	0,41	10°	$t > 0.05$

Tabela 2. Debljina subnazalnog predela, gornje usne, donje usne i brade kod pacijenata sa III skeletnom klasom

Table 2. Thickness of the subnasal region, upper and lower lip and chin in patients with skeletal class III

Parametar	Srednja vrednost	SD	Koeficijent varijacije	Standardna vrednost	t-test
Debljina subnazalnog predela	16,88mm	2,94	0,17	12mm	$t > 0,05$
Debljina gornje usne	12,88mm	2,39	0,18	12mm	$t > 0,05$
Debljina donje usne	12,31mm	2,30	0,19	12mm	$t > 0,05$
Debljina brade	11,00mm	2,13	0,19	10mm	$t > 0,05$

Tabela 3. Položaj gornje i donje usne u odnosu na EL i visina gornje usne kod pacijenata sa III skeletnom klasom

Table 3. Position of upper and lower lip in relation to EL and the upper lip height in patients with skeletal class II

Parametar	Srednja vrednost	SD	Koeficijent varijacije	Standardna vrednost	t-test
Udaljenost gornje usne – EL	6,25mm	4,06	0,65	3mm	$p < 0,01$
Udaljenost donje usne – EL	3,44mm	3,22	0,94	2mm	$p < 0,05$
Visina usne	25mm	3,46	0,14	24 +/- 2mm	$p < 0,05$

Tabela 4. Korelacija uglova H i ANB kod pacijenata sa III skeletnom klasom

Table 4. Correlation of angles H and ANB in patients with skeletal class III

Parametar	Srednja vrednost	SD	Koeficijent varijacije	Standardna vrednost	t-test
Ugao H	5,78°	4,72	0,82	8°-11°	$t < 0,01$
Ugao ANB	-1,16°	2,28	0,97	2°-4°	$t < 0,01$
Poterban ugao H na osnovu ugla ANB	3,69°	2,79	0,75	3°	$t > 0,05$

Diskusija

Pacijenti sa III skeletnom klasom imaju karakterističan rast maksile nagore i unapred- anteinklinaciju. Ugao T nije u korelaciji sa ovom promenom nagiba maksile. Njegove vrednosti odgovaraju standardu, a kod mezijalnog zagrižaja bi trebalo da se smanjuju.

To ukazuje da meka tkiva ne prate skeletnu podlogu, ali i da su ona svojom debljinom blago kompenzovala skeletnu anomaliju.

Debljina mekih tkiva je nešto veća u odnosu na standardne vrednosti, naročito debljina gornje usne i subnazalnog predela. Položaj gornje i donje usne u odnosu na EL ukazuje na postojanje konkavnog profila i promene u biometrijskom polju dok nema značajnih odstupanja u visini gornje usne. Ugao H ne prati promenu vrednosti ugla ANB kao što ni ostala tri parametra idealnog profila po Holdaway-u:

- donja usna dodiruje liniju mekih tkiva
- postoji harmonična proporcija između nosa i gornje usne tj. linija mekih tkiva polovi bazu nosa
- usne nisu napregnute ni kod jednog pacijenta nisu ispunjena.

U proseku dobijeni rezultati odgovaraju kliničkom nalazu izgleda profila kod pacijenata sa skeletno III klasom⁹⁻¹¹.

Estetska procena profila pacijenta je od velikog interesa za ortodonte. Naročito je važno proceniti šta će se u profilu i izgledu mekih tkiva izmeniti posle završenog ortodontskog tretmana. Pri tome treba početi od pretpostavke da estetske modifikacije zavise od promene položaja gornjih i donjih sekutića, ali isto tako i od promena položaja i razvijenosti skeletnih struktura gornje i donje vilice. Iz toga razloga neophodno je u dijagnostičkom postupku osim analize studijskih modela i skeletnih struktura uraditi i analizu mekotkivnog profila¹²⁻¹⁴.

Zaključak

Analizu mekotkivnog profila posebno je važno uraditi kod pacijenata kod kojih se sprovodi terapijski postupak tzv. kamuflaže. Pri analizi mekotkivnog profila obavezno je uzeti u obzir i uzrast pacijenta. Ukoliko je pacijent mlađi utoliko je nezahvalnije prognozirati definitivni estetski izgled profila. Treba imati na umu da oblik čela i oblik i položaj i veličina nosa igraju znatnu ulogu u formiranju profila, a to su strukture na koje ortodontska terapija nema nikakvog uticaja.

Discussion

Patients with skeletal class III have characteristic growth of the upper jaw towards up and front – anteinclination. Angle T does not correlate with this change in maxillary inclination. Its values match standard and should decrease in mesial bite. This implies that soft tissues do not follow their skeletal base, but slightly compensate the skeletal anomaly with their thickness.

Soft tissue thickness is slightly higher than average, particularly upper lip and subnasal region. The position of both lips in relation to EL line imply the concave profile and changes in the biometric field while there is no significant deviation in the upper lip height. Angle H does not follow the change in the angle ANB values and the other three parameters of the ideal profile according Holdaway is not fulfilled:

- Lower lip touches the soft tissue line
- There is a harmonious proportion between the nose and upper lip, i.e the soft tissue line halves the nasal base
- Lips are not in strain

On average, the results match the clinical findings in patients with skeletal class III.⁹⁻¹¹

Esthetic profile analysis is of great importance for orthodontists. It is very important to determine what is going to change in the soft tissue profile after orthodontic treatment. One should start from the assumption that esthetic modifications depend on changes in the position of upper and lower incisors as well as the position and development of skeletal structures of both jaws. Therefore, during the diagnostic procedure, it is necessary to conduct the analysis of soft tissue profile and not only study models and skeletal structures¹²⁻¹⁴.

Conclusion

It is very important to do the analysis of soft tissue profile when the so-called ‘camouflage’ therapeutic procedure is indicated. It is necessary to take patients’ age into consideration. The younger the patient the more unreliable is to make prognosis about the definite profile esthetics. One should bear in mind that the shape of the forehead, the shape, position and dimensions of the nose play an important part in the profile constitution, and these are the structures orthodontic therapy has no influence on.

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