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## KINESIO TASMALASH VA UNING YUZ-JAG' SOXASI YALLIG'LANISH KASALLIKLARIDA QO'LLANILISH IMKONIYATLARI

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### ХУЛОСА

Yuz-jag' jarroqligi va jarroqlik stomatologiyaning dolzarb muammolaridan biri - yuz-jag' soxasi o'tkir odontogen yiringli yallig'lanish kasalliklarida xirurgik muolajadan so'ng kinesio tasmalari yordamida reabilitatsiya qilish samaradorligini oshirish bo'yicha adabiyotlar sharxi.

**Maqsad** - yuz-jag' sohasi kasalliklarida kinesio tasmalariga bag 'ishlangan nashrlarning materiallarini o 'rganish.

**Metodika.** Mikrosirkulyatsiyani normallashtirishda, shish paydo bo 'lishini kamaytirishda va og 'riqning og'irligida amalga oshiriladigan sanogenetik jarayonlar uchun qulay sharoitlar yaratilishiga olib keladigan, teriga dasturlar shaklida qo 'llaniladigan kinesiologik tasmaning ta sir qilish mexanizmlari batafsil tavsiflangan. Sportchilarda mushakskelet tizimining shikastlanishlarini oldini olish va davolashda kinesio teypress usulidan foydalanish yuzasidan nashrlar sonining ko 'payishi qayd etilgan. Bundan tashqari, hozirgi vaqtida kinesio tasmalari klinik tibbiyotda, masalan, nevrologiya va ortopediya amaliyotida ham qo 'llanilmoqda. Zamonaviy ilmiy izlanishlarga 'ra, surunkalibelog 'rigsubakromial impijment sindromi bilan og 'rigan bemorlarda kinesio lentalarini qo 'Hash og 'riq sindromining og 'irligini sezilarli darajada kamaytirishi mumkin.

**Natijalar.** Kinesio lenta usuli sport va klinik tibbiyotda Juda keng qo llanilishiga qaramay, mavjud adabiyotlarda uni yuz-jag Jarrohligida, xususan soxasi o tkir odontogen yiringli yallig'lanish kasalliklari uchun foydalanishga bag 'ishlangan oz sonli ishlar mavjud. Yuz- jag' soxasi o tkir odontogen yiringli yallig'lanish kasalliklari operativ muolajaidan so 'ng kinesio tasma usulidan foydalanish yallig'lanish shishishi darajasini va og 'riq sindromining

intensivligini sezilarli darajada kamaytirishga imkon berdi.

**Xulosa.** Chop etilgan adabiyotlarni ko 'rib chiqish natijalari shuni ko 'rsatadiki, kinesio tasmasi - bu yuz-jag' soxasining o tkir odontogen yallig'lanish kasalliklarini operativ davolashidan so 'ng reabilitatsiya qilishning istiqbolli, sodda, shikast yetkazmaydigan usuli hisoblanib, u nojo 'ya ta 'sir va asoratlarni yuzaga keltirmaydi va bemorlarning hayot sifatini sezilarli darajada yaxshilaydi. Taqdim etilgan ilmiy nashrlarning materiallarini tahlil qilish natijasi, hozirgi vaqtida yuqorida keltirilgan ta'sir mexanizmlariga hamda og 'riq va shishishi kamaytirish imkoniyatiga qaramay yuz-jag' soxasining o tkir odontogen yallig'lanish kasalliklarida kinesio tasmalarini qo 'Hash bo'yicha tadqiqotlar yetarli emasligini ko 'rsatib berdi.

**Kalit so'zlar:** Yuz-jag' soxasi o tkir odontogen yallig'lanish kasalliklari, yuz-yuz sohasi, og 'riq sindromi, operatsiyadan keyingi shish, reabilitatsiya, kinesio tasmalari

### РЕЗЮМЕ

**Предмет.** Представлен обзор литературы, посвященный актуальной проблеме челюстно-лицевой хирургии и хирургической стоматологии — повышению эффективности реабилитации пациентов с переломами нижней челюсти с использованием кинезиотейпирования.

**Цель** — изучить материалы публикаций, посвященных кинезиотейпированию при воспалительных заболеваниях челюстно-лицевой области.

**Методология.** Подробно описаны механизмы действия кинезиологического тейпа, наложенного в виде аппликаций на кожу, которые приводят к созданию благоприятных условий для саногенети-



ческих процессов, реализующихся в нормализации микроциркуляции, уменьшении отека и выраженности болевого синдрома. Отмечен рост числа публикаций по применению данного метода в профилактике и лечении травм опорно-двигательного аппарата у спортсменов. Более того, в настящее время кинезиотейпирование применяется и в клинической медицине, например, в практике неврологии и ортопедии. По данным современных научных исследований, применение кинезиотейпов у пациентов с хронической болью в спине, субакромиальным импингмент-синдромом, острой хлыстовой травмой шейного отдела позвоночника позволяет существенно снизить выраженность болевого синдрома.

**Результаты.** Несмотря на довольно широкое применение метода кинезиотейпирования в спортивной и клинической медицине, в доступной литературе имеется незначительное количество работ, посвященных его использованию в челюст-

но-лицевой хирургии, в частности при переломах нижней челюсти. Применение метода кинезиотейпирования после операции остеосинтеза отломков нижней челюсти позволило существенно снизить уровень воспалительного отека и интенсивность болевого синдрома.

**Выводы.** Представленные результаты обзора литературы свидетельствуют о том, что кинезиотейпирование является перспективным, простым, нетравматичным методом реабилитации после хирургического лечения переломов нижней челюсти, не имеющим побочных эффектов и осложнений и существенно улучшающим качество жизни пациентов. Однако научных исследований, посвященных анализу использования кинезиотейпирования при травматических повреждениях челюстно-лицевой области, на данный период недостаточно.

**Ключевые слова:** ООГВЗ, челюстно-лицевая область, болевой синдром, послеоперационный отек, реабилитация, кинезиотейпирование

## ABSTRACT

**Subject.** A review of the literature on the topical problem of maxillofacial surgery and surgical dentistry is presented - increasing the efficiency of rehabilitation of patients with mandibular fractures using kinesio taping.

**The goal** is to study the materials of publications devoted to kinesio taping in inflammatory diseases of the maxillofacial region.

**Methodology.** The mechanisms of action of kinesiological tape applied in the form of applications to the skin, which lead to the creation of favorable conditions for sanogenetic processes, which are realized in the normalization of microcirculation, decrease in edema and the severity of pain, are described in detail. An increase in the number of publications on the use of this method in the prevention and treatment of injuries of the musculoskeletal system in athletes has been noted. Moreover, at present, kinesio taping is also used in clinical medicine, for example, in the practice of neurology and orthopedics. According to modern scientific research, the use of kinesio tapes in patients with chronic back pain, subacromial impingement syndrome, acute whiplash of the cervical spine can significantly reduce the severity of pain syndrome.

**Results.** Despite the rather widespread use of the kinesio taping method in sports and clinical medicine, the available literature contains a small number of works devoted to its use in maxillofacial surgery, in particular, for fractures of the mandible. The use of the kinesio taping method after the osteosynthesis of the fragments of the lower jaw made it possible to significantly reduce the level of inflammatory edema and the intensity of the pain syndrome.

**Conclusions.** The presented results of the literature review indicate that kinesio taping is a promising, simple, non-traumatic method of rehabilitation after surgical treatment of mandibular fractures, which does not have side effects and complications and significantly improves the quality of life of patients. However, scientific research devoted to the analysis of the use of kinesio taping for traumatic injuries of the maxillofacial region is insufficient for this period.

**Key words:** Acute purulent-inflammatory diseases of the jaw, maxillofacial region, pain syndrome, postoperative edema, rehabilitation, kinesiotherapy

O'tkir odontogen yiringli yallig'lanish kasalliklar (O'OOYYK), shu jumladan, ayniqsa periostit, osteomielit, flegmona va boshqalar barcha o'tkir yiringli yallig'lanish kasalliklarining 95-98 foizini tashkil etadi. Shu bilan birga, odontogen yallig'lanish kasalliklari bilan kasalxonaga yotqizilgan bemorlaming soni 60-70% ni tashkil qiladi, ulaming katta qismi (60-80% gacha) yuz va bo yin flegmonasi bilan kasallanganlar (Supiev T.K., 2001; Timofeev A.A., 2002; Dumovo E.A., 2003).

Bu yuz-jag' sohasi bemorlarining og'ir guruhi hisoblanib, jarayon tarqalganda natijasi o Tim bilan yakunlangan holatlar kam uemas. Yuz-jag' soxalari flegmonalarining zo'rayishi 3-28% hollarda kuzatiladi (Soloviev M.M., Bolshakov O.P., 2001; Gubin M.A., Lazutikov O.V., 2002; Levenets A.A., Chugunov A.A.), 2006). Bunda o Tim ko'rsatgichi 28-50% ni mediastinit, sepsis va intrakranial asoratlami rivojlanishida esa - 34-90%ni tashkil qiladi (Gubin M.A., Lazutikov O.V., 2002; Hudson J.W., 1993).



O' OYYK og' irlik daraj asini kuchayishi vaqtinchalik nogironlik ko'rsatgichlarini sezilarli daraj ada oshishiga olib keladi va ba'zi hollarda bemorlaming erta nogironligiga olib keladi (Shargorodskiy A.G., 2001; Robustova T.G., 2005). Shunday qilib, ko rib chiqilayotgan muammo nafaqat tibbiy, balki muhim ijtimoiy-iqtisodiy ahamiyatga ham ega.

O'z navbatida, bugungi kunda O'OYYKnı davolashning mavjud usullarining hech biri mutaxassislamı to'liq qondirmaydi. Shuning uchun alarm davolash masalalari hali xanuz dolzarbligicha qolmoqda va davolashning yangi usullarini ishlab chiqishga qaratilgan tadqiqotlaming dolzarbligi va ulaming ijtimoiy-iqtisodiy ahamiyati aniq.

YJS ning tuzilish xususiyatlari (ko'p miqdordagi klechatka mavjud, qon bilan yaxshi ta'minlangan) yallig'lanish jarayonlarining tez kattalashib va o'sib boruvchi koilateral shishi va to'qima infiltratsiyasi bilan birga keluvchi umumiy xususiyatlarini belgilab beradi. Shuni inobatga olgan holda, zarur bo'lган jarrohlik aralashuvni amalga oshirish bilan bir qatorda asoratlaming oldini olish va davolash maqsadida antibakterial va yallig'lanishga qarshi terapiya o'tkaziladi. Biroq, yallig'lanish jarayonining ta'sirini davolash uchun ishlatiladigan dori-darmonlaming va fizioterapiya usullarining tobora ko'payib borishi har doim ham kerakli natijaga olib kelmaydi. Asoratlami rivojlanishiga to'sqinlik qiladigan davolashning yangi samarali usullarini izlash - bu yuz-jag'jarrohligining dolzarb muammolaridan biridir. O'z navbatida, nomedikamentoz davolanishga qiziqish ortib bormoqda. Bunga misol qilib og'riqni kamaytirish, shish vato'qimalaming infiltratsiyasini rezorbsiyasini tezlashtirish va yallig'lanish o'chog'i soxasida qon aylanishini yaxshilash uchun keng qo'llaniladigan fizioterapevtik davolashni keltirish mumkin.

Kinesio tasmalari O'OYYKdavolashning zamonaviy usullaridan biri bo'lishi mumkin. Ushbu usul 1973 yilda Kase K. (AQSh) tomonidan ishlab chiqilgan. Ushbu usul mushaklar va boyqlamlami doimiy ravishda stimullash, og'riq va yallig'lanishni kamaytirish bilan bir qatorda haddan tashqari charchagan mushaklami bo'shatishga va ulaming tabiiy davolanish jarayonini tezlashtirishga yordam beradi. Hozirgi vaqtida u nafaqat sportda, balki reabilitatsion tibbiyotda ham keng qo'llanilmoqda (Kasatkin M.S., 2017; Kase K., 1998).

Kinesio tasmalari yuqori sifatli paxtadan tayyorlangan va tana haroratida faollashadigan akril asosli gipoallergen yopishqoq qatlam bilan qoplangan elastik yopishqoq tasmalardir. Kinesio tasmalarining elastik xususiyatlari epidermisning elastiklik ko'rsatgichlariga yaqin. Kinesio tasmalarining paxta bazasi terming nafas olishiga va uning yuzasidan bug'lanishiga xalaqit bermaydi, bu esa uni suv sportlarida ishlatishga, shuningdek teriga yopishtirilgan holda besh va undan ortiq kunga

goldirishga imkon beradi [8]. O'zlarining klinik tadqiqotlari natijasida

Kase K. va xammualliflari kinesio tasmalash usulini qo'llashning bir necha yo'nalishlarini aniqladilar:

- fasialto'qimalamitekislash;
- fastsiya va yumshoq to'qimalami ko'tarish orqali yallig'lanish va og'riq sohasidagi bo'shliqni ko'paytirish;
- harakatni cheklash uchun sensor stimulyatsiyani ta'minlash;
- ajralmalami limfa yo'llariga yo'naltirish orqali shishlami bartaraf etishda yordam berish [8].

Keyinchalik, kinesio tasmalarini qo'llashning y ana bir natijasi aniqlandi: teri mexanoreseptorlarini stimulyatsiyasini kuchaytirish orqali propriosepsiyaning kuchayishi [7, 9].

1995 yildan beri ushbu usul tibbiy yordam ko'rsatish va reabilitatsiya qilish bo'yicha ba'zi protokollarga dastlab AQShda, so'ngra Evropaning bir qator mamlakatlarida kiritildi [7].

Kinesio tasmasini ta'sir qilish mexanizmi sanogenetik jarayonlar uchun qulay sharoitlami yaratishga asoslanganbo'lib, ular terming biriktiruvchi to'qimalarida mikrosirkulyatsiyani normallashtirish, og'riq sindromini pasaytirish, segmentar darajadagi afferent impulsami optimallashtirishda amalga oshiriladi. Korreksialovchi texnikasiga mexanik, limfatik, funktsional va fiksatsiya kiradi [10]. Terining sirt qatlamiga aplikatsiya(surtish) sifatida qo'llaniladigan kinesiologik tasmaning quyidagi ta'sir mexanizmlari tavsiflangan:

tasmaning elastik xususiyatlarini hisobga olgan holda, qo'llaniladigan joy da teri va teri osti yog ' mexanik ravishda ko 'tariladi, bu biriktiruvchi to' qima va hujayralararo moddada mikrosirkulyatsiyani faollashtirish uchun qulay sharoit yaratadi va natijada metabolizm mahsulotlarini olib tashlashga yordam beradi va limfa drenaj ini yaxshilaydi. Teri bilan qo'shni kinesio tasmasi ostida to'g'ridan-to'g'ri interstsial bosimni kamaytirish muhimdir. Ammo bu oddiy mikrosirkulyatsiyani ko'p jihatdan belgilaydigan yuqorida ko'rsatilgan tuzilmalar biriktiruvchi to'qima va hujayralararo moddaning (hujayralararo matritsa) holatidir. Ushbu tuzilmalar metabolizmni amalga oshirishda etakchi rol o'ynaydi va trofik, plastik, himoya va mexanik funktsiyalami bajaradi. Tananing ichki muhitni bo'lib, u orqali o'tadigan qon va limfa kapillyarlari bilan birgalikda hujayralararo matritsa boshqa barcha to'qimalami ozuqaviy moddalar bilan ta'minlaydi va metabolik mahsulotlami olib tashlaydi, trofik va metabolik funktsiyalami ta'minlaydi;

inson tanasining to'qima to'qimalariga mahkam o'mashganligi va termosensitiv yopishqoq qatlam mavjudligi sababli kinesiologik tasma terining ko'plab retseptorlari apparatini faol ravishda rag'batlantiradi va shu bilan uning ostidagi to'qima tuzilmalari va organlariga ta'sir qiladi [11]. Og'riqninganiqpasayishi



ikki mexanizm orqali amalga oshiriladi: qalin miyelin A-tolalaridan (A-beta) afferent oqimning faollahishi va biriktiruvchi to'qimada mikrosirkulyatsiyaning faollahishi. Og'riq nosiseptorlarga tasir qilish xususiyati tufayli paydo bo'ladi, ular erkin nerv oxirlari bo'lib, ulaming eng ko'pi terming yuqori qatlamlarida joylashgan. Nosiseptorlardan keladigan impuls orqa miya orqa shoxlariga ingichka miyelinli A- (A-delta) va ingichka miyelinsiz C-tolalar orqali kiradi. Mexanoreseptorlardan (sekin moslashuvchan va tez moslashuvchan) va baroreseptorlardan, shuningdek, terining yuzaki qatlamlarida joylashgan impulslar, miyelinning qalin A-tolalari orqali orqa shoxlarga kiradi. "Darvoza n azo rati" yoki afferent kirish nazariyasiga muvofiq og'riq shovqinlari orqa muguzning ikkinchi plastinkasida joylashgan jelatinli moddada qalin miyelin A-tolalari orqali keladigan impuls, ya'ni teginish va baroreseptorlardan kelib chiqib, og'riq sindromini kamaytiradi [11].

Og'riqni kamaytirishning ikkinchi mexanizmi to'qimalarda mikrosirkulyatsiya faollahganda amalga oshiriladi. To'qimalaming shikastlanishi hujayralararo moddaga gistamin, serotonin va prostaglandinlar kabi yallig'lanish mediatorlarining kirib borishi bilan biiga keladi. Ushbu moddalar C-tolali nosiseptorlaming sezuvchanligini oshiradi, bu ulaming qo'zg'алиш chegarasini pasaytiradi va og'riqli afferent oqimini oshiradi. Teriga surtilgan kinesiologik tasma dastur ostidagi biriktiravchi to'qimalarda bo'sh j oyni ko'paytirib, mikrosirkulyatsiyani faollashtiradi va yallig'lanish vositachilarining yo'q qilinishiga yordam beradi [11].

So'nggi yillarda sportchilarda tayanch-harakat tizimining shikastlanishining oldini olish va davolashda, statik va dinamik holatni boshqarishda ushbu usuldan foydalanish bo'yicha ushbu uslubning samaradorligi to'g'risida aniq xulosa qilinmaganiga qaramay, nashrlar soni ko'paymoqda [12]. Shunga qaramay, aksariyat mualliflar kinesio tasmalarini sport tibbiyotida ishlatalishga moyildirlar [9, 13-15].

Bundan tashqari, hozirgi kunda kinesio tasmalari klinik tibbiyotda qo'llanilmoqda. Shunday qilib, osteoartrit bilan og'igan bemorlami davolash va reabilitatsiya qilishda kinesio tasmalarini qo'llash, sharhlarga ko'ra, kinesio tasmalarini 3 kunga qo'yish qo'shma ishlami yaxshilaydi, og'riq zo'ravonligini kamaytirishga va tizza bo'g'imining barqarorligini oshirishgayordam beradi. Limfatikdrenajniyaxshilash va to'lovni kamaytirish uchun kinesio tasmalarining xususiyati ham ishonchli isbotlangan [8, 16, 17].

So'nggi paytlarda kinesiologik tasma yozish texnikasi nevrologiya va ortopediya amaliyotida faol rivojlanmoqda. Hozirgi vaqtida kinesio tasmasini fizioterapevtlar terapeutik ta'sir mexanizmlariga asoslangan, bu ba'zi fiziologik jarayonlami tikiash va modulyatsiya qilish, shuningdek to'qimalarda sanogenetik jarayonlar uchun qulay shart-sharoitlami yaratishdir. Kinesio tasmalari bo'g'implaming sezgir

funktсиясига, mushaklaming ishlashiga ta'sir qiladi, ulaming bioelektrik faolligini vaharakatlanish doirasini oshiradi, og'riq darajasini pasaytiradi, limfa tizimi va endogen og'riq qoldimychi mexanizmlaming faolligini oshiradi va mikrosirkulyatsiyani yaxshilaydi [18].

Zamonaviy ilmiy tadqiqotlarga ko'ra, sumnkali bel og'rig'i, subakromial impingment sindromi, servikal o'murtqa o'pkaning o'tkir shikastlanishi bilan og'igan bemorlarda kinesio tasmalarini qo'llash jarohatlardan so'ng darhol va keyin 24 soat ichida og'riqning og'irligini sezilarli darajada kamaytirishi mumkin [18].

Boshqatomondan, ParreiraPdo S. va boshqalaming fikriga ko'ra. (2014), mushaklar-skelet tizimining kasalliklari bo'lgan bemorlarda kinesio tasmalarini ishlatalish samaradorligi platsebo bilan taqqoslandi va og'riqni yengillashtirishga qaratilgan boshqa davolash usullari samaradorligidan oshmadi [18].

Bir qator mualliflaming ta'kidlashicha, kinesio tasmalari ko'proq an'anavyi davolash usullari bilan birgalikda qo'shimcha davolash sifatida, shuningdek balneo-, elektro-, kriyoterapiya va fizioterapiya mashqlari bilan birgalikda qo'llanilganda samarali bo'lishi mumkin [18-20].

Kinesio tasma usuli sport va klinik tibbiyotda keng qo'llanilganiga qaramay, mavjud adabiyotlarda bu usulni yuz-yuz jarrohligida, xususan pastki jag 'suyagi sinishlarida foydalanishga bag'ishlangan oz sonli ishlar mavjud. Shunday qilib, Ristov O. va boshq. (2013) shuni ko'rsatdiki, operatsiyadan keying! 5 kun ichida ochiq-oydin kamaytirilgandan so'ng va pastki jag 'sinishi ichki fiksatsiyadan so'ng kinesio tasmasidan foydalanish operatsiyadan keying! dastlabki ikki kun ichida shish darajasini 60% dan ko'proq kamaytirishga imkon berdi. Mualliflaming ta'kidlashicha, bemorlarda og'riq sezilarli darajada kamaygan. Shunday qilib, taqdim etilgan natijalar shuni ko'rsatdiki, kinesio tasmalari jarrohlik davolanishdan so'ng, nojo'ya ta'sir va asoratlamni keltirib chiqarmaydigan vabemorlaming hayot sifatini sezilarli darajada yaxshilaydigan, istiqbolli, oddiy, shikast etkazmaydigan davolash usuli hisoblanadi [18,21-23].

Keyinchalik UluM. va boshq. (2018) ta'kidlashicha, kinesio tasmalarini maxillofasiyal jarrohlikda qo'llash operatsiyadan keying! davrda og'riq va shishishni kamaytiradi. Operatsiyadan keying! shikoyatlamni kamaytirish uchun ishlatalidigan boshqa usullarga alternativa sifatida foydalanish mumkin degan xulosaga kelindi [24].

Dos Santos KW. va boshq. (2019) hammalliflar harakatlanishni yaxshilash va og'riq va shishishni kamaytirish bo'yicha terapeutik tadqiqotlar bo'yicha asosiy ma'lumotlar bazalarini elektron qidirish natijasi ko'rsatdiki, kinesio tasma usuli operatsiyadan so'ng darhol shishishni kamaytiradi. Biroq, ulaming



ta'kidlashicha, har bir tadqiqotda ro'yxatdan o'tgan ishtirokchilar soni kam bo'lgan [25].

**Xulosalar.** Adabiyotlami ko'rib chiqish natijalari shuni ko'rsatadiki, kinesio tasmasi - bu yuz-jag' soxasining o'tkir odontogen yallig'lanish kasalliklarini jarrohlik davolashidan so'ng reabilitatsiya qilishning istiqbolli, sodda, shikast etkazmaydigan usuli bo'lib, u nojo'ya

ta'sir va asoratlami keltirib chiqarmaydi va bemorlaming hayot sifatini sezilarli darajada yaxshilaydi.

Taqdim etilgan ilmiy nashrlaming materiallarini tahlil qilish shuni ko'rsatadiki, hoziigi vaqtida tasvirlangan ta'sir mexanizmlariga va og'riq va shishishni kamaytirish imkoniyatiga qaramay, bu yuz-jag' soxasining o'tkir odontogen yallig'lanish kasalliklarida kinesio tasmalarini qo'llash bo'yicha tadqiqotlar etarli emas.

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## ИЗМЕНЕНИЕ ПРОФИЛЯ ЛИЦА ПОСЛЕ УСТРАНЕНИЕ ВТОРИЧНЫХ ДЕФОРМАЦИЙ ВЕРХНЕЙ ЧЕЛЮСТИ (ОБЗОР ЛИТЕРАТУРЫ)

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Modern orthognathic surgery is distinguished by a high degree of predictability of the postoperative result, while ensuring good, stable fixation, which is achieved not only by fixing jaw fragments with mini plates, but also by improving the aesthetics of the face. By not using this component in the surgical treatment of patients with secondary maxillofacial deformities, doctors obtain results that do not meet the aesthetic and functional requirements for postoperative results, as well as a high probability of relapse. Therefore, it is so important to take into account the condition of the soft tissues of the face when planning treatment. Harmony of the face and smile when performing complex orthodontic surgical treatment of patients with skeletal deformities of the maxillofacial region

should be achieved at the orthodontic, surgical, and orthopedic stages

Дефицит роста и развития в срединно-лицевом комплексе является основным недостатком первичной репарации ВРГН в неонатальном периоде роста, хорошо документировано упоминается в литературе [1,5,11]. Считается, что причинами является образование рубцовой ткани в центры роста верхней челюсти [4,6,15], дыхание рта вследствие обструкции носовой ход [1,7,8], дефицит альвеолярного отростка из-за отсутствия зубов [9,10] и напряженная верхняя губа [2,3,13]. Неподготовленные дефекты кости, с другой стороны, приводят к нормальное челюстно-лицевое развитие [12]. Из-за недостаточности среднего отдела лица, ортогнатиче-