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THE EVALUATION OF THE RESIDUAL AND SECONDARY DEFORMATION OF THE MEDIUM FACE ZONE IN PATIENTS WITH UNILATERAL CLEFT LIP

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Backround. The treatment of patients with cleft lip and palate is a complicated medical-social problem. The residual and secondary deformations of the nose, upper lip, and dentoalveolar require surgical correction in these patients after undergoing complete reconstruction as a child.

Aim. To systematize the degree of severity of the residual secondary deformation of the medium face zone in adult patients after previous surgery.

Materials and methods. This scientific work was based on the results of 42 adult patients with unilateral cleft lip after undergoing complete reconstructive surgery as a child. The evaluation of residual and secondary deformations of the nose, upper lip, and vestibule was performed in adults aged 25–40 years. The typical residual deformation at these locations was determined and separated into three groups and given a value.

Results. We observed that 91% of the patients with unilateral cleft lip had a deformation in the medium face; of these patients, 15% had severe deformation with an absolute indication for surgery.

Conclusion. The residual and secondary deformations of the medium face zone were diagnosed in 91% (80.6%–96.7%) of the patients operated using the Miro-Limberg-Obuyhovoi method in the remote period. Moreover, 15% of these deformations had an absolute indication for surgery. The three numbers used in the evaluation system of the residual and secondary deformations of the medium face zone in patients with a unilateral cleft lip enable impartial and quick determination of the intensity of one or more deformations of the nose, lip, or vestibule of the mouth.

Keywords: residual deformation; cleft lip and palate; system of evaluation; medical rehabilitation; remote results.

ОЦЕНКА ОСТАТОЧНЫХ И ВТОРИЧНЫХ ДЕФОРМАЦИЙ СРЕДНЕЙ ЗОНЫ ЛИЦА У ПАЦИЕНТОВ С ВРОЖДЕННОЙ ОДНОСТОРОННЕЙ РАСЩЕЛИНОЙ ВЕРХНЕЙ ГУБЫ

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Актуальность. Лечение пациентов с врожденной расщелиной верхней губы и нёба (ВРГН) является сложной медико-социальной проблемой. При этом остаточные и вторичные деформации носа, верхней губы, выраженные зубочелюстно-лицевые деформации зачастую требуют оперативной коррекции у этих пациентов во взрослом возрасте после завершения реконструктивного лечения в детском периоде.

Цель исследования — систематизировать степень тяжести остаточных и вторичных деформаций средней зоны лица (носа, верхней губы, преддверия рта) у пациентов во взрослом возрасте после проведенного ранее оперативного лечения односторонней врожденной расщелины верхней губы.

Материалы и методы. Работа основана на результатах исследования 42 взрослых пациентов с врожденной односторонней расщелиной верхней губы после завершения их медицинской реабилитации в детском возрасте. Оценка остаточных деформаций носа, верхней губы, преддверия рта проведена в возрастной категории от 25 до 40 лет. Выявленные типичные остаточные деформации указанной локализации были разделены на три группы и оценены по балльной системе.

Результаты. Установлено, что у пациентов с односторонней врожденной расщелиной верхней губы деформации средней зоны лица сохраняются в 91 % наблюдений, из которых 15 % имеют деформации выраженной степени с абсолютными показаниями к оперативному лечению.

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Выводы. При первичной хейлоринопластике по методике Миро – Лимберг – Обуховой в отдаленном периоде остаточные и вторичные деформации лица отмечены у 91 % (80,6–96,7 %) пациентов. При этом у 15 % из них деформации имеют выраженный характер, что служит показанием к проведению местнопластических корригирующих операций.

Трехбалльная система оценки остаточных и вторичных деформаций средней зоны лица у пациентов с ВРГН позволяет объективно и быстро оценить степень выраженности той или иной деформации носа, губы и преддверия рта.

Ключевые слова: остаточные деформации; врожденная расщелина губы и нёба; система оценки; медицинская реабилитация; отдаленные результаты.

Background

Among patients with congenital malformations of the face, congenital cleft lip and palate (CCLP) accounts for up to 90% of cases [1]. Full completion of medical rehabilitation for patients with CCLP is one of the most important problems in health care.

Incomplete medical rehabilitation of patients in this category is not limited to children with CCLP. Despite the significant successes of integrated surgical and orthodontic treatment and medical rehabilitation of patients with unilateral CCLP, a number of treatment problems remain for adults [2–4]. According to some authors, approximately 80% of adult patients with CCLP require remedial facial surgery [5–7].

The natural shape and symmetry of the upper lip and nose, their aesthetic appeal, the contribution of the facial muscles, and a number of functions are primarily due to the anatomically regular position of the nasal cartilage and muscles of the nasolabial region. Deformity of the nasal passage boundary, flattening of the tip and wings of the nose, cicatricial deformity of the upper lip and the arch of the oral vestibule, and a slit-like defect of the alveolar process are typical signs of residual and secondary deformities of the midface after surgical treatment for CCLP [1].

The aim of this study was to assess the severity of residual and secondary deformities of the midface (nose, upper lip, oral vestibule) in adult patients after surgical treatment of unilateral CCLP in childhood. Specifically, we aimed to identify the most significant typical signs of residual and secondary (postoperative) deformities of the midface in adulthood; to assess the severity of typical facial deformities using a developed point system; and to justify the suitability of remedial surgeries for medical reasons, based on the results of an objective assessment of the degree of deformity severity as well as the possibility of performing surgeries only to improve facial aesthetics.

Materials and methods

Deformities of the midface were studied in 42 patients with CCLP, aged 25 to 40 years, after their medical rehabilitation had been completed in childhood.

To assess the deformity of the nasolabial zone, we developed a three-point assessment system, in accordance with which the degree of severity was determined, from 0 to 2 points, for each deformity of the nose, upper lip, and oral vestibule. Criteria for assessing the degree of deformity severity were as follows: 0, no deformity after complete recovery; 1, deformity is slightly pronounced, with no dysfunction; 2, severe deformity, dysfunction.

Results and discussion

In our patient group, we found that primary cheilorhinoplasty was performed according to the Miro-Limberg-Obukhova method in 96% of cases. In 4% of cases, it was not possible to establish the technique of the primary surgery.

Flattening of the nasal tip on the side of the cleft was noted in 24% of cases. No pronounced deformity was found in this zone. Flattening of the nasal wing with preservation of the contour of the nose was observed in 40% of cases, although this type of deformity did not cause patient complaints. No asymmetry of the position of the base of the nasal wing was found in more than half of the patients. However, 4% had a pronounced asymmetry of the nasal wing position, about which the patients complained. No pronounced deformities of the nasal boundary and nasal opening were observed. The curvature of the nasal dorsum with gross deformity

Table 1

Nasal deformities in patients with unilateral congenital cleft lip and palate after surgical treatment

Nose deformities	Points		
	0	1	2
1. Flattening of the nasal tip: 0 — not flattened 1 — flattened from the side of the cleft 2 — flattened on both sides	76%	24%	
2. Flattening of the nasal wing on the side of the cleft: 0 — not flattened 1 — flattened with intact contour of the nose 2 — flattened with impairment of the nose contour	60%	40%	
3. Asymmetry of the nasal wing base position: 0 — no 1 — subtle asymmetry 2 — significant asymmetry	56%	40%	4%
4. Alternation of the size of the nose boundary on the side of the cleft: 0 — the nose boundary is fully restored 1 — the boundary is narrowed or widened ~ 2 mm (subtle) 2 — the boundary is narrowed or widened over ~ 2 mm	40%	60%	
5. Curvature of the nasal dorsum: 0 — not curved 1 — curved in the cartilage section 2 — curved in the bone and cartilage section	64%	32%	4%
6. Narrowing of the nasal openings within the cartilage section: 0 — no narrowing 1 — narrowing is due to a scar in the boundary area; bottom; columella 2 — along the perimeter of the nostrils/circular narrowing	40%	60%	
7. Impairment of nasal breathing (subjective assessment): 0 — not impaired 1 — insignificantly impaired, during inhalation the patient exerts more effort on the nose deformity side 2 — severely disturbed on both sides of the nasal cavity	51%	40%	9%

was found in 4% of cases; however, even with a slight curvature of the dorsum in 32% of patients, this defect was noted by them as significant. One of the patients' complaints was of nasal breathing impairment (according to a subjective assessment). Some 9% of the examined patients reported breathing difficulty in the two nasal passages, and 40% had this symptom in CCLP (Table 1).

In terms of upper lip deformity, the number of patients with pronounced signs of this localization exceeded the number of patients with severe nose deformities. A pronounced deformity of the vermilion surface was observed in 16%; in 36% of patients, this symptom was less pronounced. Hypertrophic scars, deforming the shape of the upper lip, were noted in 8% of patients, which led to facial disharmony. The impairment of the philtral column height with a subtle scar was registered in 68% of the patients examined, and was due to the characteristics of the Miro-Limberg-Obukhova method. Patients with a significant disorder of the philtral column height comprised 8% of cases, and were classified as a severe deformity of the upper lip. Discontinuity of the orbicularis oris muscle was found only in 4% of the patients examined (Table 2).

Cicatricial cords and folds of the oral vestibule were observed in 36% of the patients examined, and they did not disturb the depth of the oral vestibule. The so-called "slit" of the upper jaw's alveolar process was noted in 32% of patients, and 12% had a defect in the palate (Table 3).

A score of 2 points for at least one of the signs presented, in our opinion, relegated the patient to

Table 2

Deformities of the upper lip in patients with unilateral congenital cleft of the upper lip and palate after surgical treatment

Deformities of the upper lip	Points		
	0	1	2
1. Cicatricial deformity of the upper lip: 0 — subtle normotrophic scar of the dermal area without damage to the philtral column 1 — a noticeably wide scar of the dermal area (without deformity) 2 — scar, deforming the upper lip	44%	48%	8%
2. Defect of philtral column height: 0 — slight or partial disorder of the philtral column 1 — the philtrum is completely flattened, the scar is subtle, the philtrum is shortened 2 — the philtrum is significantly flattened, deformity	24%	64%	8%
3. Discontinuity of the orbicularis oris muscle: 0 — no impairment 1 — discontinuity along the scar in the nasal boundary 2 — discontinuity of the muscle along the entire scar	96%	4%	
4. Deformity of the vermilion surface: 0 — vermilion surface has no alteration in size or shape, subtle normotrophic scar (in the area of the white line) on the border of the skin and the vermilion surface 1 — normotrophic scar with an excess of vermilion surface along the free edge 2 — pronounced scar, deformity of the vermilion surface with skin interposition into the vermilion surface and/or the vermilion surface into the skin, pronounced muscle discontinuity along the vermilion surface ("whistler's groove"), pronounced excess of the vermilion surface, and mucous membrane of the upper lip	48%	36%	16%
5. Narrowing of the upper lip by direction By height: 0 — no shortening 1 — mild shortening within 1–3 mm 2 — pronounced shortening of more than 3 mm By length: 0 — no shortening 1 — mild shortening 2 — pronounced shortening	80%	20%	

Table 3

Oral vestibule deformities in patients with unilateral congenital cleft lip and palate after surgical treatment

Deformities of the oral vestibule	Points		
	0	1	2
1. Cicatricial cords, folds in the region of the arch of the oral vestibule: 0 — no cords and folds, the depth of the vestibule is intact 1 — cords and/or folds in the area of the arch of the vestibule without a significant decrease in the depth of the vestibule 2 — cords and/or folds in the area of the arch of the vestibule with a significant change in its depth	68%	32%	
2. Orinasal fenestration: 0 — no 1 — found in the area of the alveolar process (the "slit" of the alveolar process) 2 — appears in the palate region	52%	36%	12%

Fig. 1. Patient M., 26 years of age. Residual deformity of the nose and upper lip after unilateral congenital cleft of the upper lip and palate

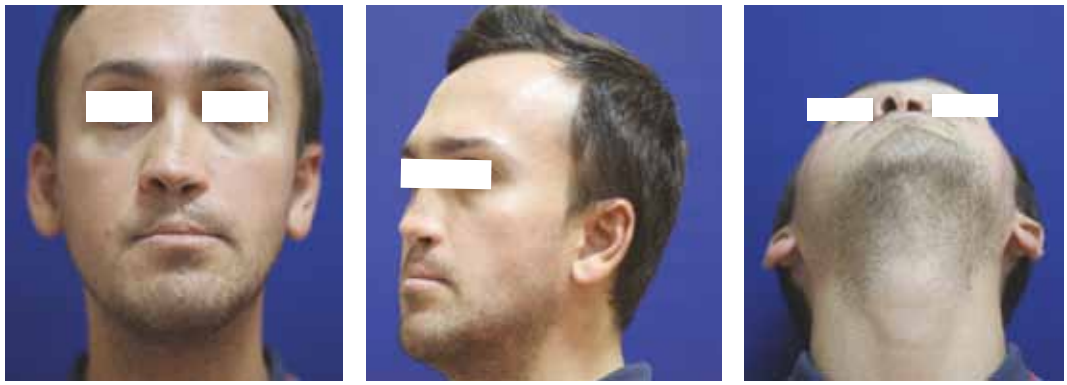

Fig. 2. Patient A., 31 years of age. Residual deformity of the nose and upper lip after unilateral congenital cleft of the upper lip and palate

the group with mandatory indications for surgical treatment. In the case of existing but unpronounced deformity (1 point), the patient could undergo surgical treatment for aesthetic reasons. However, despite a 2-point indicator, a number of patients were completely satisfied with their appearance, which was ground for refusing remedial surgery.

Case studies. Figure 1 shows an example of a good long-term result from surgical treatment: Patient M., 26 years of age, with a diagnosis of residual deformity of the nose and upper lip after unilateral CCLP. A slight flattening of the wing of the nose is noted, as well as narrowing of the nasal cavity boundary (up to 2 mm) on the side of the cleft; nasal breathing is free; there is a subtle normotrophic scar on the skin of the upper lip; vermilion surface shows no alteration in size or shape. There are no pathological changes in the

Fig. 3. Patient A., 38 years of age. Residual deformity of the nose and upper lip after unilateral congenital cleft of the upper lip and palate

oral vestibule. Nose score is 1 point, upper lip score is 0 points. The patient has no complaints. Quality of life is high according to all the scales. Complete rehabilitation of the patient.

Clinical cases. Figure 2 shows a clinical case demonstrating a satisfactory result of long-term surgical treatment. Patient A., 31 years of age, had a diagnosis of residual deformity of the nose and upper lip after unilateral CCLP. Clinician-observed signs were as follows: a slight flattening of the nasal wing; narrowing of the nose boundary (up to 2 mm) on the side of the cleft; nasal breathing is free; insignificant narrowing of the upper lip across the width, the normotrophic scar on the dermal part of the lip, and defect in the shape and size of the vermilion surface. The alveolar process is slit (food enters into the nose). Assessment of the nose: 1 point; assessment of the upper lip: 1 point. The patient has no complaints. Quality of life on the "social functioning" and "psychological health" scales is reduced. Remedial surgery on the nose and upper lip is recommended.

Figure 3 shows a clinical example with a poor result from surgical treatment. Patient A., 38 years of age, had a diagnosis of residual deformity of the nose and upper lip after unilateral CCLP. There is a slight flattening of the tip and wing of the nose on the side of the cleft; nasal breathing is free; normotrophic scar on the cutaneous part of the upper lip; severe deformity of the vermilion surface with interposition into the cutaneous part of the lip; and disruption of discontinuity of the orbicularis oris muscle. Assessment of the nose: 1 point; assessment of the upper lip: 2 points. The patient has no complaints. Quality of life is high according to all assessment scales; however, remedial surgery of the lip and nose is recommended.

Additional information

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Ethical review. All patients gave voluntary consent to participate and for us to process and publish personal data. Permission was obtained from the local ethics committee.

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