

# ХІРУРГІЧНА СТОМАТОЛОГІЯ

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## DEPENDENCE OF THE FORMATION OF SCAR TISSUES OF MAXILLOFACIAL LOCALIZATION ON CIRCADIAN RHYTHMS

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### Relevance of research

To determine the individual features of the organization of circadian rhythms, the term "chronotype" was proposed [1]. According to the analysis of foreign and domestic literature data, the biological rhythm affects not only the mental state [2], but also the state of the person as a whole. Biological rhythms provide a person's ability to adapt to the environment. Swedish psychologist O.Okvist in 1970 proposed a questionnaire to determine the chronotype of patients. He singled out three types of chronotype in patients: morning ("larks"), intermediate (arrhythmic, asynchronous, "pigeons") and evening ("owls") [3,4]. The morning chronotype is characterized by early awakening, good working capacity for lunch and early sleep. Asynchronous type wakes up 1-2 hours later than the morning type, active all day. People of the evening type, if conditions permit, wake up late, slowly get involved in work and are little able to work before dinner. In the evening, the activity of people with the evening chronotype increases, and they can work productively until midnight and later. The most adapted to modern social conditions of life is the asynchronous type. The most rigid biorhythms in the morning type, especially evening and night work, negatively affect their well-being. The evening type occupies an intermediate position in terms of the ability to adapt to a new time regime, but it turns out to be the best when working on a night shift [5].

### The Aim

The aim of our study was to establish how the biological rhythm can affect the reparative functions of the human body, namely wound healing and scar formation with a combination of injection of the placental cryoextract preparation at the intraoperative stage and electrophoresis at the postoperative stage.

### Materials and methods of research

The research was conducted on the basis of the Department of Maxillofacial Surgery on the basis of KU "Poltava Regional Clinical Hospital. M.V. Sklifosovsky Poltava regional council ". A total of 20 patients took part in the study. To study the materials, we analyzed patients who were hospitalized for routine surgery for congenital neck cysts and scalp and neck tumors.

Patients were interviewed and interviewed during hospitalization to determine the chronotype [1,4,5].

Patients were divided into 2 groups.

The first group of patients consisted of 10 people who underwent cryoextraction of the placenta at the intraoperative stage and performed electrophoresis with the above drug in the postoperative period, this group included two subgroups.

The first subgroup included 5 patients with morning chronotype. The second subgroup also consisted of 5 patients, but with the evening type of chronotype.

The second control group consisted of 10 people who underwent surgery according to the classical method without additional preventive measures. The second group was also divided according to the chronotype of patients into 2 subgroups. Patients of the first subgroup - 5 people with morning and 5 patients with evening chronotype.

Thus, to observe, assess the dynamics, and obtain the results of the assessment of wound healing and the quality of postoperative scar formation, we used the following parameters for 3 months of clinical research [5]:

P-1 - Vascularization (from 0 to 2 points);

P-2 - Pigmentation (from 0 to 2 points);

P-3 - Height of a scar (from 0 - 2 points);

P-4 - Surface (from 0 to 2 points);

P-5 - Density of a scar (from 0 - 2 points);

P-6 - Subjective sensations of the patient (itching) (from 0 to 2 points);

P-7 - Subjective sensations of the patient (pain) (from 0 to 2 points).

### Research results and their discussion

We obtained the following results in a routine examination of patients and study of clinical parameters in patients of the first group for 180 days in the postoperative period. The skin was close to intact in 80.0% (4 patients), and the formed moderate hyperemia of the scar was observed in 20.0% (1 patient), isopigmentation was present in 80.0% (4 people), hypopigmentation is observed in 20.0% (1 person), the height of the scar above the skin surface from 1-2 mm was observed in 80% (4 cases), > 2 mm - in 20.0% (1 patient). At the same time, a uniform increase in the scar above the level of intact skin was observed in 100% (5 people). In 40.0% (2 patients) there was a moderately compacted scar, with pronounced tissue induration 10.0% (1 person) and 20.0% (2 patients) had a soft-elastic, in terms of subjective sensations. the following data: in 40.0% (2 cases) there were no complaints of itching, and 40.0% (2 people) noted mild discomfort, 10.0% (1 patient) complained of severe discomfort. 20.0% (1 patient) and 80.0% (4 patients) did not report pain.

With regard to the indicators of subgroup 2, the following data were observed on the 180th day after the inspection. 80.0% (4 people) had normal vascularization (close to intact skin) for 180 days and only 10.0% (1 patient) had moderate hyperemia. Skin pigmentation was within normal limits in 40% (2 cases), isopigmentation also in 40.0% (2 patients), and 20.0% (1 person) with hyperpigmentation. Height of the scar above the level of tissues in 60.0% (3 cases) from 1-2 mm and in 40.0% (2 people) more than 2 mm, the skin surface is evenly increased above the level of intact skin in 80.0% (4 people) and in 20.0% (1 case) unevenly elevated above the level. Moderately compacted scar was observed in 80.0% (4 patients), 20.0% (1 case) scar with severe tissue induration. Mild discomfort (minor itching) was observed in 60.0% (3 patients) and with complaints of severe itching in 40.0% (2 cases). At 180 days, complaints of pain were present in only 20.0% (1 person), the remaining 80.0% (4 people) had no complaints of pain.

The indicators of the control group 1 subgroup on the 180th day after examination were as follows: 40.0% (2 patients) had moderate hyperemia, and 60.0% (3 cases) normal vascularization (close to intact skin). Skin pigmentation within normal limits was 60.0% (3 cases), and hypopigmentation was observed in 40.0% (2 patients), scar height above tissue level in 90.0% (4 cases) from 1-2 mm and in 10.0% (1 person) more than 2 mm, the scar surface is evenly raised above the level of intact skin in 60% (3 people) and unevenly raised in 40.0% (2 cases).

It is noteworthy that moderately compacted scar was observed in 40.0% of cases (2 patients), in 20.0% (1 case) soft-elastic scar and in 40.0% (2 persons) with severe induration of soft tissue. Mild discomfort (slight itching) 100.0% (5 patients). After

180 days, only 40.0% (2 persons) had complaints of pain, and the remaining 60.0% (3 patients) had no complaints of pain.

Analyzing the dynamics of clinical indicators of the state of scar tissue in patients in subgroup 2, the indicators differed slightly. It should be noted that in 80.0% of cases (4 patients) there was moderate hyperemia, in 20.0% (1 case) the scar was with severe hyperemia, isopigmentation 20.0% (1 patient) and hyperpigmentation was observed in 80, 0% (4 people). The height of the scar above the skin surface - 40.0% (2 patients) with 1-2 mm, the remaining 60.0% (3 people) more than 2 mm., Uniform scar growth was observed in 20.0% (1 case), and in 80.0% (4 patients) had an uneven increase, 40.0% (2 cases) had a moderately compacted scar, and 60.0% (3 patients) had a pronounced soft tissue compaction, and 20.0% (1 patient) there was a noticeable increase in slight itching, and 80.0% (4 persons) complained of severe discomfort (itching). 40.0% (2 persons) complained of pain within 180 days, the remaining 60.0% (3 patients) did not feel pain.

### Conclusion

According to the obtained clinical data for the 180th day, we can say that in patients of the first group of the first subgroup, and patients of the second subgroup who underwent surgery using placental cryoextract in the intraoperative period and electrophoresis with the above drug in the postoperative period scar formation was better than in patients with morning and evening chronotype of the second clinical group who underwent surgery according to the classical method without the use of additional preventive measures.

Therefore, it should be noted that regardless of the established morning or evening chronotype in patients of the second group, it should be noted their difference in the data obtained in contrast to the first clinical group, which may indicate the need for additional preventive measures, both intraoperative and short and long postoperative, which is most relevant for people with a detected evening chronotype.

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### Список літератури

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### Summary

To determine the individual features of the organization of circadian rhythms, the term "chronotype" was proposed [1]. According to the analysis of foreign and domestic literature data, the biological rhythm affects not only the mental state [2], but also the state of the person as a whole. Biological rhythms provide a person's ability to adapt to the environment. Swedish psychologist O. Okvist in 1970 proposed a questionnaire to determine the chronotype of patients. He singled out three types of chronotype in patients: morning ("larks"), intermediate (arrhythmic, asynchronous, "pigeons") and evening ("owls").

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Therefore, it should be noted that regardless of the established morning or evening chronotype in patients of the second group, it should be noted their difference in the data obtained in contrast to the first clinical group, which may indicate the need for additional preventive measures, both intraoperative and short and long postoperative, which is most relevant for people with a detected evening chronotype.

**Key words:** pathological scars, scar prevention, cryoextract of the placenta.

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## ЗАЛЕЖНІСТЬ ФОРМУВАННЯ РУБЦЕВОЗМІНЕНИХ ТКАНИН ЩЕЛЕПНО-ЛИЦЬОВОЇ ЛОКАЛІЗАЦІЇ ВІД ЦИРКАДНИХ РИТМІВ

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### Резюме

Для визначення індивідуальних особливостей організації добових ритмів було запропоновано термін "хронотип". Відповідно до аналізу зарубіжних і вітчизняних даних літератури біологічний ритм впливає не тільки на психічний стан, а й стан людини загалом. Біологічні ритми забезпечують здатність людини адаптуватися в навколишньому середовищі. Так, у 1970 році шведський психолог О.Оквіст запропонував опитувальник для визначення хронотипу пацієнтів. Він виділив три різновиди хронотипу у хворих: ранковий («жайворонки»), проміжний (аритмічний, або «голуби») і вечірній («сови»).

Дослідження проведено на базі кафедри щелепно-лицьової хірургії в КУ «Полтавська обласна клінічна лікарня ім. М.В.Склясовського Полтавської обласної ради». Усього в дослідженні взяли участь 20 пацієнтів. Для вивчення матеріалів проаналізували дані пацієнтів, які були госпіталізовані для планової операції з приводу вроджених кіст шиї й пухлин шкіри голови та шиї.

Перша група пацієнтів складалася з 10 осіб, яким на інтраопераційному етапі вводили кріоекстракт

плаценти й проводили електрофорез зазначеним вище препаратом у післяопераційний період, до цієї групи входили дві підгрупи.

До першої підгрупи ввійшли 5 пацієнтів із ранковим хронотипом. Другу підгрупу також склали 5 пацієнтів, але з вечірнім типом хронотипу.

Друга контрольна група складалася з 10 осіб, яким оперативне втручання виконували за класичним методом без додаткових профілактичних заходів. Друга група також була поділена залежно від хронотипу пацієнтів на 2 підгрупи. Пацієнти першої підгрупи – 5 осіб із ранковим і 5 пацієнтів із вечірнім хронотипами.

Згідно з отриманими клінічними даними на 180-у добу виявлено, що в пацієнтів першої групи першої підгрупи й пацієнтів другої підгрупи, яким оперативне втручання виконували з використанням кріоекстракту плаценти в інтраопераційний період і електрофорезом із зазначеним вище препаратом у післяопераційний період, утворення рубця відбувалося краще, ніж у пацієнтів із ранковим і вечірнім типами хронотипу другої клінічної групи, яким оперативне втручання було проведено за класичною методикою без застосування додаткових профілактичних заходів.

Отже, незалежно від установленого ранкового або вечірнього хронотипу в пацієнтів другої групи, є різниця в отриманих даних у порівнянні з першою клінічною групою, що може свідчити про необхідність додаткових профілактичних дій і в інтраопераційний, і в найближчий і віддалений періоди після оперативного лікування, що найбільше стосується осіб із виявленим вечірнім хронотипом.

**Ключові слова:** патологічні рубці, профілактика рубців, кріоекстракт плаценти.