

RESULTS OF SPLINTS USE IN NASAL CAVITY SURGERIES

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Abstract: The creation of new medical technologies allows doctors to perform simultaneous surgical procedures in the upper respiratory tract. Joint operative procedures are often performed in ENT organs, but this problem remains poorly studied and insufficiently illuminated in the practice of otorhinolaryngology. There are not many works of local authors devoted to simultaneous operations in rhinology. It should be noted that, despite the possibilities of modern conservative therapy, the number of simultaneous operations in diseases of the nose, intranasal structures, and paranasal cavities is not decreasing.

Keywords: nasal cavity, simultaneous operations, paranasal sinuses.

Introduction. Among the diseases of the larynx, deviation of the septum of the nose occupies the main place. The deviation of the septum of the nose causes the occurrence of other pathological processes in the nasal cavity. The deviation of the septum of the nose causes hypertrophy of the lateral wall of the nasal cavity, which in turn causes joint diseases in the cavity. Simultaneous operations ("simultaneous" in English - at the same time) are complex operative practices aimed at the simultaneous surgical correction of two or more diseases of different organs in one or more anatomical areas. It is especially important to perform simultaneous operations in cases where there is a pathogenetic connection between two surgical diseases. If the existing joint pathology is not surgically corrected at the same time, the disease may worsen in the postoperative period. It should be noted that simultaneous surgical correction by an otorhinolaryngologist is cost-effective compared to separate operations, in which the cost of place-day is reduced by 2 or more times, the time spent on examinations, pre- and post-operative treatment, anesthesiological drugs costs are reduced.

The creation of new medical technologies allows doctors to perform simultaneous surgical operations in the field of upper respiratory tract less invasively. Joint operative procedures are often performed in ENT organs, but this problem remains poorly studied and insufficiently covered in the practice of otorhinolaryngology. There are not many works of local authors devoted to simultaneous operations in rhinology [5,17,3,7,16]. It should be noted that despite the possibilities of modern conservative therapy, the number of simultaneous operations in diseases of the nose, nasopharyngeal structures and paranasal cavities is not decreasing [3,9,10,21,1,17].

Purpose of the research work was - studying the morpho-functional features of the nasal mucosa after joint simultaneous surgical operations in cavity of the nose.

The results and discussion. Research materials and methods In 2021-2022, 60 patients with diseases of the nose and paranasal cavities were comprehensively examined and treated at the otorhinolaryngology department of the multidisciplinary clinic of the Tashkent Medical Academy. Combined surgical procedures were performed in these patients, and morpho-functional studies were conducted on the effectiveness of hemostatic agents. Symptoms such as difficulty breathing through the nose, constant and occasional runny nose, impaired sense of smell were observed in the patients. These symptoms have been associated with impaired olfactory function in some cases. During the clinical examination, the symptoms of headache and forehead pain were often noted in the patients (table 1).

Table 1

The frequency of the main clinical symptoms in patients with joint disease of the nasal cavity

Complaints	Number of patients (n=120), %	
	abs.	%
Difficulty breathing through the nose	60	100.0
Impaired sense of smell	14	23.0
Nasopharyngeal discomfort	22	36.6
Sneezing	18	45.0
Discharge from the nose (of different nature - mucous, mucous-purulent, etc.)	30	50.0
Constant runny nose	20	33.3
Occasional runny nose	10	16.6
Occasional headaches	10	16.6

$p > 0.05$

During the study hydrogen ion concentration activity was also studied during the investigation nasal separation, suction, mucociliary transport and nasal cavity in patients (table 2).

Table 2.

Results of functional testing methods of the mucous membrane of the nasal cavity

Indicators	Group 1 n=20	2nd group, n=20	Group 3 n=20	Indicators in the norm

Mucociliary clearance (min)	31.7±0.67** *	29.83±0.4***	30.83±0.4** *	11.5±1.4
	28.5±0.72*	26.4±0.82**	20.4±0.82**	
Hydrogen ion concentration indicator (pH)	7.36±0.01** *	7.37±0.01***	7.37±0.01** *	7.0±0.01
	7.3±0.01	7.2±0.01	7.2±0.01	
Suction function (pupil reaction time (number))	81±2.65***	82.3±1.41***	82.3±1.41** *	68.2±0.6
	74.5±0.42**	73.8±0.72**	69.8±0.72**	
Separation function (cotton weight (mlgr))	57.3±0.48** *	56.5±0.52***	56.5±0.52** *	41.25±0.08
	51.1±0.16	49.3±0.26*	44.3±0.26*	

*-Differences compared to normal values weak reliable, (p>0.05)

** -Differences compared to normal values moderately strong reliable, (p>0.05)

***-Differences compared to normal values strong reliable, (p>0.05)

As can be seen from Table 2, there was almost no difference in pH indicators in the 3 groups of patients. However, in the mucociliary transport examination, 31.7 minutes before and 28.5 minutes after surgical interventions in 1 group of patients (with a gauze swab), this indicator was 29.83 before and 26 minutes after medical procedures in 2 groups of patients (hemostatic sponge). 4 minutes, in 3 groups of patients (splint) it was 30.83 minutes before treatment, and then it was 20.4 minutes. Sucking task (pupillary reaction time (number)) of group 3 patients was observed to be significantly changed compared to the rest of group 1 and 2 patients, namely 82.3 seconds before treatment and 69.8 seconds after treatment. The separation function (cotton weight (mlgr)) results show that

According to obtained results, it can be concluded that the tools used after surgical interventions in the nasal cavity have a significant effect on the mucous membrane of the nasal cavity, which was confirmed in the above data. Among the compared methods, the results of the use of the Splint tool we offer after surgical interventions show that the effect on the mucous membrane of the nasal cavity is almost minimal.

In order to investigate nasal breathing or nasal ventilation, we studied rhinopneumometry indicators (table 3).

Table 3

Rhinopneumometry test results (before treatment procedures)

Group	Right		Left	
	SOP, sm ³ /s	SS, Pa/ sm ³ /s	SOP, sm ³ /s	SS, Pa/ sm ³ /s

I	311.01±9.65 (46%↓)	1.64±0.11 (43%↑)	314.01±9.65 (46%↓)	1.79±0.11 (43%↑)
II	324.23±10.07 (59%↓)	1.45±0.09 (96%↑)	323.23±10.07 (59%↓)	1.65±0.09 (96%↑)
III	301.01±9.65 (46%↓)	1.31±0.11 (43%↑)	325.01±9.65 (46%↓)	1.46±0.11 (43%↑)

p>0.05

As can be seen from the table, rhinopneumometry parameters (before surgery): volume flow value in group 1 patients, right - 291 sm³/s, left - 274 sm³/s, resistance, right - 1.84 PA/sm³ /s, left - 0.59 PA/ sm³/s, UHO - 340 sm³/s, UQ - 0.54 PA/ sm³/s. Value of volume flow in 2 groups of patients, right - 291 sm³/s, left - 274 sm³/s, resistance, right - 1.84 PA/ sm³/s, left - 0.59 PA/ sm³/s, UHO - 340 sm³/s, UQ - 0.54 PA/ sm³/s. Volume flow value in 3 groups of patients, right - 291 sm³/s, left - 274 sm³/s, resistance, right - 1.84 PA/ sm³/s, left - 0.59 PA/ sm³/s, UHO - 340 sm³/s, UQ - 0.54 PA/ sm³/s. The results of the examination showed that the indicators of nasal ventilation were almost the same in all 3 groups of patients before treatment.

Table 4

Rhinopneumometry test results (after treatment procedures)

Group	Right		Left	
	SOP, sm³/s	SS, Pa/ sm³/s	SOP, sm³/s	SS, Pa/ sm³/s
I	411.01±9.65 (66%↓)	0.84±0.11 (73%↑)	414.01±9.65 (76%↓)	0.99±0.11 (68%↑)
II	584.23±10.07 (79%↓)	0.65±0.09 (86%↑)	564.23±10.07 (84%↓)	0.89±0.09 (89%↑)
III	671.01±9.65 (90%↓)	0.44±0.11 (93%↑)	684.01±9.65 (92%↓)	0.51±0.11 (95%↑)

p>0.05

After treatment procedures (table 4): volume flow value in group 1 patients, right - 204 sm³/s, left - 360 sm³/s, resistance, right - 0.74 PA/ sm³/s, left - 0.42 PA/ sm³/s, UHO- 564 sm³/s, UQ - 0.27 PA/ sm³/s. Value of volumetric flow in 2 groups of patients, right - 204 sm³/s, left - 360 sm³/s, resistance, right - 0.74 PA/ sm³/s, left - 0.42 PA/ sm³/s, UHO - 564 sm³/s, UQ - 0.27 PA/ sm³/s. Value of volumetric flow in 3 groups of patients, right - 204 sm³/s, left - 360 sm³/s, resistance, right - 0.74 PA/ sm³/s, left - 0.42 PA/ sm³/s, UHO - 564 sm³/s, UQ - 0.27 PA/ sm³/s.

The obtained data indicate that the ventilatory function of the nasal cavity was significantly improved in 3 groups of patients (this was manifested due to the absence of means of resistance to the airflow in the nasal cavity).

Patients have a nose a microbiological study was carried out in order to study the significance of the microflora of the mucous membrane in the effect of the means on the functions of the nasal cavity after the medical procedures carried out in the nasal cavity.

In this, **in the 1st group** when examining the condition of smears taken from the nasal mucosa of patients who underwent nasal septum surgery and used gauze tampons 7-14 days after the operation, staphylococcus aureus, Haemophilus influenzae, Streptococcus pneumonia, Escherichia coli were found in the microbiological landscape of 7-14 days in 46 patients. . In the remaining 4 patients, the recovery of the condition of the nasal mucosa in the postoperative period lasted for 1 month. When examining the condition of the smears taken from the nasal mucosa on the 7-14 days after the operation, 47 Staphylococcus aureus and Escherichia coli were detected in the microbiological landscape of the patient on the 7th day. Staphylococcus aureus was detected on the 14th day.

In order to determine the degree of influence of the tools used in the nasal cavity on the nasal mucosa after nasal cavity surgical procedures, a cytological study was conducted in patients (table 5).

Table 5

In rhinopathologies, the state of the mucous membrane of the nasal cavity is on a rhinocytogram

Signs	1 group (n=)			2 groups (n=)			3 groups (n=)		
	Before the operation	Day 7 after surgery	Day 14 after surgery	Before the operation	Day 7 after surgery	Day 14 after surgery	Before the operation	Day 7 after surgery	Day 14 after surgery
breath papillary cellular structures derived from the epithelium of the airways									
Basal cells	+	+	+	+	+	+	+	+	+
Scattered cells of the respiratory epithelium	-	-	-	-	-	+	+	+	+

Signs of hypersecretion in respiratory epithelial cells	-	-	+	-	+	+	+	+	+
Degenerative-destructive signs in respiratory epithelial cells	-	+	+	-	-	+	-	-	-
Metaplasia of squamous cell elements	-	-	+	-	-	+	-	-	+
Treatment pathomorphosis	-	-	-	-	-	+	+	+	+
Cornification	-	-	+	-	+	+	-	+	+
Fibroblasts	-	+	+	-	+	+	+	+	+
segmented neutrophils	-	-	+	-	-	+	-	+	+
Eosinophils	+	-	+	+	-	+	+	-	+
Lymphocytes	+	+	+	+	+	+	+	+	+
Histiocytes	-	-	+	-	+	+	+	+	+
Phagocytosis	-	-	+	-	-	+	+	+	+
Bacterial flora	+	+	+	+	+	+	+	-	-

As can be seen from the table data, the state of the nasal mucosa was recorded in patients of each group in the cytological material obtained from the mucous membrane of the nasal cavity after the operation. Thus, in patients who used gauze tamponade of the nasal cavity (the first group), clear signs of inflammatory infiltration and dystrophic changes were detected. In the second group of patients, a hemostatic sponge was used after surgery, and in this group, in addition to the symptoms in the above group, therapeutic pathomorphism was determined. Patients in the third group (only the splint was used) were distinguished by the reduction of inflammatory signs and the presence of regenerative process signs, as can be seen from the rhinocytogram of the mucous membrane.

Thus, the cytological examination of smears taken from the mucous membrane of the nasal cavity taken from patients with various rhinopathologies in the postoperative period showed that nitric oxide leads to the disruption of intercellular connections in the structure of polypous tissue and splint after surgery in group 3 patients with the help of it led to the strengthening of the regenerative processes of the mucous membrane of the nasal cavity. The results of cytological studies have once again confirmed the effectiveness of using the splint in the practice of otorhinolaryngologists.

CONCLUSION

The use of the silicon "Splint" as an alternative to tamponade of the nasal cavity in joint surgical procedures in the nasal cavity, due to the reduction of the volume of complications during and after the operation in patients, strong trophic changes of the mucous membrane and pain reduction improved treatment results.

References:

1. Baranov, Konstantin Konstantinovich, et al. "Osobennosti diagnostici i lecheniya sochetannoy patologii nosa i slezootvodyashchikh putey u detey." *Practical Medicine* 16.5 (2018).
2. Kalinin, P. L., et al. "Otsrochennye nosovye krvotecheniya posle endoscopicheskogo transspenoidalnogo udaleniya adenoma hypophysis" *Rossiyskaya rinologiya* 25.4 (2017): 28-36.
3. Arabyan, Jirayr Migranovich. *Objektivnaya otsenka i obsnovanie hirurgicheskogo meshetelstva pri sochetannoy adenotonzillarnoy i rhinogennoy respiratory chronic. Obstruksii u detey.* Diss. Yerevan State Medical University named after M. Geratsy, 2017.
4. Kochergin, G. A., V. V. Dvoryanchikov, and F. A. Syroezhkin. "Rehabilitation of patients with vestibular disturbances posle simultannyx rinootoxirurgicheskix vmeshatelstv." *Russian Rhinology* 23.4 (2015): 29-33.

5. Ermakova, M. V., K. O. Kurganova, and A. B. Knyazev. "Tselesoobraznost simultannyx operatsiy v rinologii." Bulletin of medical internet conference. Vol. 5. No. 5. Obshchestvo s ogranichennoy otvetstvennostyu "Nauka i innovatsii", 2015.
6. Palchun V. T., Magomedov M. M., Dibirova T. A. USTROYSTVO DLYa OStanOVKI NOSOVOGO KROVOTECHENIya. - 2011.
7. Boyko, N. V., A. S. Bachurina, and A. I. Zhdanov. "Prophylaxis of postoperatsionnykh krovotachenii pri adenotomii." Russian rhinology 23.2 (2015): 26-30.
8. Boyko, N. V., and Yu. V. Shatokin. "Pathogenesis of nosovykh krovotachenii and bolnykh s arterialnoy hypertension." Journal of Otorhinolaryngology 80.5 (2015): 41-45.
9. Tarkova AR, Chernyavsky AM, Morozov SV, Grigorev IA, Tkacheva NI, Rodionov VI. Hemostatic material of local activity and the basis of oxidized cellulose. SibNauchMedy Journ. 2015;35(2):11-15.
10. Zabirov R. A. i dr. MASSIVNYE RETcIDIVIVIRUYushchIE NOSOVYE KROVOTEChENIya U BEREMENNOY JENshchchINY //RUSSIAN OTORHINOLARYNGOLOGY Meditsinskiy nauchno prakticheskiy zurnal. - 2011. - S. 144.
11. Kraynyukov P. E. i dr. Ostanovka profuznogo nosovogo krovotacheniya (prnk) with ispolzovaniem roentgenendovaskulyarnykh methodical //Glavnyy vrach Yuga Rossii. – 2013. – no. 1 (32).
12. Konstantinova YuE, Abrosimova NV, Sotnikov KA, Lipatov VA. Pokaseteli krovoostanavlivayushchey activity foam na osnove carboxymethylcellulose. Zdorove i Obrazovanie v XXI veke. 2016;18(1): 142-44.
13. Sharipova, M. A., G. A. Nurkasimova, and J. S. Isabaeva. "Metody uskoreniya srokov reabilitatsii posleoperatsionnogo perioda v rhinohirurgii." Journal of Surgery Kazakhstan 2 (38) (2014).
14. Gyusan, A. O. "Vozmojnosti simultaneous surgery and rhinology." Journal of Otorhinolaryngology 3 (2014): 48-50.
15. Leontev, A. F., etal. "Simultannoe lechenie hirurgicheskoy i otorinolarinologicheskoy patologii u detey mlasse vozrasta." Kremlin medicine. Clinical Journal 1 (2014): 37-38.
16. Morozov, Aleksandr Dmitrievich, and Milana Muzarinovna Kumysheva. "Opređenje taktiki perioperatsionnogo lecheniya zabolevaniy polosti nosa. Russianotorhinolaryngology Meditsinskiy nauchno-prakticheskiy zurnal (2014): 153.
17. Khushvakova N. J., Khamrakulova N. O., Abdusamatov F. S. PRIMENENIE PREPARATA TAXOKOMBA PRI NOSOVYX KROVOTECHENIYAX U

- BOLNYX S CHRONICHESKIM LEUKOZOM //Novye tekhnologii v otorinolarinologii. - 2014. - S. 287-291.
18. Konoshkov A. S., Letyagin K. V. DIAGNOSTICHESKAYA I LEChEBNAYA TAKTIKA PRI POSTTRAUMATICHESKIX NOSOVYX KROVOTEChENIYAX //RUSSIAN OTORHINOLARYNGOLOGY Meditsinskiy nauchno-prakticheskiy zurnal. - 2012. - S. 99.
19. Jurova O. N., Podpalov V. P., Kunitsky V. S. Obshchaya vrachebnaya praktika: tactic of a doctor in arterial hypertension, oslojnennoy nosovym krovotecheniem //Uvajaemye kollegye!. - 2012.
20. Bejin A.I., Maystrenko A.N., Lipatov V.A., Chizhikov G.M., and Zhukovsky V. A.. "Hemostatic activity of new application means and basis of carboxymethyl cellulose" Vestnik new medical technology, vol. XVIII, no. 3, 2011, pp. 152-154.
21. Tarkova A. R., Chernyavsky A.M., Morozov S.V., Grigorev I.A., Tkacheva N.I., and Rodionov V.I. "Hemostatic material of local activity and the basis of oxidized cellulose" Sibirskii nauchnyi meditsinskii zurnal, vol. 35, no. 2, 2015, pp. 11-15.
22. Lipatov V.A., Ershov M.P., Sotnikov K.A., Ushanov A.A., Novikova N.V., Konstantinova Yu.E. "Sovremennye tendentsii primeneniya lokalnykh apliktsionnykh krovoostanovlivayuschikh sredstv" Innova, no. 2 (3), 2016, pp. 64-69.
23. Lipatov V.A., Lazarenko S.V., Sotnikov K.A., Severinov D.A., & Ershov M.P. (2018). K voprosu o metodologii sravnitel'nogo izucheniya stepi hemostaticheskoy aktivite aplikatsionnyx