РАЗДЕЛ I. МЕДИЦИНА

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The prognostic significance of the pathology of the hooked process with limited fistula of
the maxillary sinus with the nasal cavity to determine the risk of complications of sinus
lift and dental implantation in the elderly

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Annotation

In connection with the above, the purpose of the study was to assess the incidence of pathology of the hooked process at the preoperative stage of preparation for a sinus lift and to analyze the conjugation of changes in the anatomy of the osteometal complex with postoperative complications. The study examined 134 patients with atrophy of the alveolar process of the upper jaw and defects of the dentition before conducting sinus-lifting and dental implantation. As a result, for the development of postoperative purulent sinusitis, risk factors were edema of the mucous membrane of the osteometal complex, narrowing of the natural fistula of the sinus with the nasal cavity. The original pathology of the hooked process, limiting the natural fistula MS with the nasal cavity, is statistically significantly associated with the development of postoperative purulent sinusitis.

Keywords: sinus lift, dental implantation, complications, purulent sinusitis, prognosis.

Introduction

Sinus lifting with bone grafting of the alveolar process of the upper jaw is one of the effective methods of providing additional bone tissue during its resorption in elderly patients when planning dental implantation [1]. The successful implementation of sinus lifting is hampered by the simultaneous pathology of the maxillary sinus (MS) and the osteomeatal complex. The fistula of the MS is opened in the lunate slit, anteriorly limited by the hooked process, behind the ethmoid bulla, medially covered by the anterior end of the middle turbinate [2]. These formations constitute the osteomeatal complex, which is located at the entrance to the middle nasal passage and is the key zone determining the state of the anterior group of the paranasal sinuses [3]. Normally, the hooked process begins from the site of attachment of the middle turbinate, goes obliquely posteriorly and downwards, reaching the upper edge of the lower turbinate. At a distance of 3-4 mm posteriorly, there is a lattice bulla [4]. Knowledge of the functional status and anatomy of the osteomeatal complex helps the surgeon during the operation to work more accurately in this area, which prevents the violation of the ventilation and drainage functions of the sinus.

At present, it has been established that before a sinus lift the preparation of the patient should be carried out with close inter-collegial collaboration between the dentist and the otolaryngologist. However, the study of the conjugation of MS pathology and complications of sinus-lifting is carried out from the standpoint of comparative analysis of frequency indicators without using the principles of evidence-based medicine and calculating the relative values of risk. This circumstance makes it difficult to objectively assess the risk of a complicated course of subantral augmentation, since the magnitude of the fraction depends on the total sample size and, at its small value, distorts the true picture.

Purpose of the study. In connection with the above, the purpose of the study was to assess the incidence of pathology of the hooked process at the preoperative stage of preparation for a sinus lift and to analyze the conjugation of changes in the anatomy of the osteomeatal complex with postoperative complications.

Materials and research methods.

The study examined 134 patients with atrophy of the alveolar process of the upper jaw and defects of the dentition before conducting sinus-lifting and dental implantation. In the clinical group, the average age was $70,1 \pm 2,1$ years. At the stage of preparation for sinus lifting, along with standard dental and radiological studies, endoscopic rhinoscopy and computed tomography of the upper jaw with the inclusion of the osteomeatal complex and the paranasal sinuses were also undertaken. In the early postoperative period, the endoscopic picture in the region of the ostiomeatal port was assessed 7–8, 14–15, 21–22 and 28–29 days after sinus lift surgery by the W.J. Lund and D.W. Kennedy, and then compared the dynamics of changes compared with the preoperative picture. At the next stage, the relationship between the initial results of the clinical, tomographic and endoscopic study with the development of complications of the intra- and postoperative period was studied. As a result, risk factors for intraoperative and postoperative complications of sinus lifting were identified.

The results of the study and their discussion.

A tomographic study of the pathology of the hooked process before a sinus lift is extremely important, since it allows us to predict complications of the drainage of the MS after the operation through a natural anastomosis. The characteristic of the hooked process according to tomographic research is summarized in table 1.

Table 1

Pathology of the structure and location of the hooked process according to tomographic studies

Characteristics of the hooked process	Number	
	Abs.	%
Attachment of the hooked process to the orbital wall with the formation of a blind pocket	1	0,7
Presence of retraction of the hooked process in the maxillary sinus	10	7,5
Hypertrophy and pneumatization of the hooked process	20	14,9
Dense adherence of the hooked process to the orbital wall	30	22,4

In 30 (22,4%) patients a tight fit of the hooked process to the orbital wall was found. Hypertrophy and pneumatization of the hooked process, which may impede the outflow of the contents from the MS after the operation, were detected in 20 (14,9%) patients. The blind pocket, due to the attachment of the appendix to the orbital wall (0.7%), the presence of a hooked process in the MS (7,5%) also hampered postoperative sinus drainage. The pathology of the hooked process, detected by computed tomography, was combined with edema in the area of the osteomeatal complex with endoscopic rhinoscopy, which, in aggregate, narrowed the natural fistula of the nasal cavity with MS.

After an open sinus lift, the course of the early postoperative period was studied. Control examinations were carried out every month.

In the clinical group, on the first day after the operative treatment, patients were bothered by moderate pain in the area of operation, difficulty in nasal breathing, and bloody discharge from the nose. In patients, tampons were removed every other day. The nasal mucosa was anemicized, and the nasal cavity was treated. 9 patients had pain syndrome. At 2-

3 days after surgery, swelling of soft tissues in the buccal and infraorbital regions on the part of the intervention and mucous membrane in the postoperative zone was observed in 96 (71,6%) patients. In 16 patients, imbibition was noted in the blood of soft tissues. By the 7th day after the operation, most patients did not observe swelling of the soft tissues of the face, swelling of the lower nasal concha and oral mucosa decreased, patients noted an improvement in nasal breathing compared to the first day after the operation. Only in 18 patients by the 7th day did the slight swelling of the soft tissues persist. On average, the nose had edema and hyperemia of the mucous membrane, the presence of hemorrhagic discharge and fibrin crusts, which covered the expanded natural fistula. Swelling of the mucous membrane of the osteomeatal opening made it difficult for the maxillary sinus to drain. By the 14th day of edema of soft tissues in the buccal and infraorbital region, on the part of the intervention and the mucous membrane in the postoperative zone in most patients was not observed.

In 3 (2,2%) patients in the early postoperative period, hematomas were found in the area of the mucous membrane of the transitional fold, as well as in the area of the skin on the cheek in the lower part on the side of the intervention. In the same category of patients, bleeding was observed on the first day in the postoperative wound area.

By the 30th day, the edges of the extended natural fistula were completely epithelized, clean, edema and hyperemia were absent, a slight mucous discharge from the sinuses. The mucous membrane of the posterior wall of the sinus without edema. On examination of the oral cavity, a pale pink, moderately moist mucous membrane was detected in the surgical area. On palpation pain was absent.

An increase in body temperature in the early postoperative period was noted in 15 patients. By day 7, in this category of patients, body temperature returned to normal.

At 7-8 days after open sinus lifting, 15 patients developed purulent sinusitis.

Insolvency of stitches in the clinical group was not observed. The wounds were healed by the first tension. The stitches were removed for 7-10 days.

The structure of the complications of the early postoperative period after an open sinus lift is summarized in Table 2.

Table 2

The structure of the complications of the early postoperative period after an open sinus lift

Complication	Number	
	Abs.	%
Perforation of the mucous membrane of the maxillary sinus	9	6,7
Postoperative purulent sinusitis	15	11,2
Severe pain syndrome	9	6,7
Long edematous syndrome	18	13,4
Hematoma	3	2,2
Exit osteotropic material beyond the bone	1	0,7

The endoscopic picture in the area of the osteomeatal opening was evaluated 7–8, 14–15, 21–22, and 28–29 days after sinus lift surgery and the dynamics of changes compared with the preoperative picture (Table 3). Three symptoms - edema, hyperemia and discharge from the sinus in the area of the natural fistula of the maxillary sinus were assessed by the system: 0 points - no manifestations of the symptom, 1 point - moderate changes and 2 points - a pronounced symptom. The maximum number of points - 6.

Table 3

Dynamics of scoring of the endoscopic picture in the area of the osteomeatal hole

Period	Edema	Hyperemia	Detachable	Total Score
Before surgery	1,2±0,05	0,1±0,02	1,5±0,05	2,8±0,4
7-8 days	2,1±0,2*	1,3±0,08*	2,6±0,3*	5,6±0,6*
14-15 days	1,7±0,3*	0,9±0,05*	2,1±0,2*	4,5±0,07*
21-22 days	1,3±0,09	0,3±0,02	0,9±0,07*	2,4±0,2
28-29 days	0,6±0,07*	0,1±0,03	0,2±0,03*	0,8±0,05*

Note: * - significant differences compared with the initial value at $p < 0.05$

In the clinical group, the mean score of the endoscopic picture of the osteomeatal complex before surgery was $2,8 \pm 0,4$ points. 7-8 days after the sinus-lifting, the total score increased by 2 times compared to the initial value ($p < 0,05$) to $5,6 \pm 0,6$, after 14-15 days it was 61% higher ($p < 0,05$) was $4,5 \pm 0,07$ points. After 28-29 days, the studied index after surgery decreased by 71% ($p < 0,05$) and corresponded to $0,8 \pm 0,05$ points.

When conducting the initial computed tomography among the total number of cases of pathology of the hooked process ($n=61$) in 31 observations, the natural fistula of the sinus and the nasal cavity was simultaneously limited. The significance of this feature on the development of postoperative purulent sinusitis is shown in Table 4. The original pathology of the hooked process, limiting the natural fistula of the MS with the nasal cavity, was statistically significantly associated with the development of postoperative purulent sinusitis ($\chi^2 = 34,4$ for

$p < 0,001$) with moderate cramping association (coefficient of contingent 0,45).

Table 4

Conjugation of the original pathology of the hooked process with the narrowing of the anastomosis of the MS according to the results of computed tomography and postoperative purulent sinusitis of the MS

Pathology of the hooked process	Abs./%	Postoperative purulent sinusitis		Total
		there is	no	
there is	Abs.	13	18	31
	% of the total for column	86,7	15,1	23,1
no	Abs.	2	101	103
	% of the total for column	13,3	84,9	76,9
Всего:	Abs.	15	119	134
	% of the total for column	100,0	100,0	100,0
The criterion of agreement and its reliability	$\chi^2=34,4$ with $p < 0,0001$			
Contingency coefficient	0,45			

Diagnostic sensitivity of the studied trait to predict postoperative complications was 86,7%, diagnostic specificity was 84,9%. The predictive value of identifying pathology of the hooked process in relation to the prediction of the development of postoperative purulent sinusitis, adjusted for the prevalence of complications, was 42%. The post-test probability of developing purulent sinusitis after sinus-lifting in identifying pathology of the hooked process before the operation was 60%, which indicates the presence of a noticeable effect of the studied trait on the postoperative complication.

Findings.

1. For the development of postoperative purulent sinusitis, risk factors were edema of the mucous membrane of the osteametal complex, narrowing of the natural fistula of the sinus with the nasal cavity.

2. The original pathology of the hooked process, limiting the natural fistula of the MS with the nasal cavity, is statistically significantly associated with the development of postoperative purulent sinusitis.

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Поиск кадрового потенциала челюстно-лицевых отделений в решении проблем пациентов с врожденной расщелиной губы и неба и их семей на этапе реабилитации и ухода

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Врожденные пороки развития можно определить как структурные или функциональные отклонения от нормы (например, метаболические расстройства), которые проявляются в период внутриутробного развития и могут быть выявлены до рождения, во время рождения или на более поздних этапах жизни, такое определение врожденным порокам развития дает ВОЗ [17].

В структуре врожденных пороков развития (ВПР) плода ведущее место занимают аномалии сердечно - сосудистой системы (50,8%), на втором – ВПР МПС (13,8%), на третьем – ВПР ОДА пороки костно - мышечной системы (11,5%), на четвертом – МВПР (6,0%), на пятом – ВПР центральной нервной системы (5,76%), на шестом – расщелины губы и неба (4,12%) (Игнатьева О.В., 2013 г.).

В структуре хирургических заболеваний челюстно – лицевой области (ЧЛО) у детей значительную группу составляют врожденные пороки развития. Среди всех видов пороков развития ЧЛО частота рождения детей с расщелиной верхней губы и неба самая высокая и колеблется в различных регионах РФ от 1:500 до 1:1000 новорожденных. По данным ВОЗ, средняя частота этой аномалии в мире составляет 1:700 новорожденных (С.В. Дьякова, 2009).

Занимая 4-7 место в структуре врожденных аномалий, расщелины неба находятся на одном из первых мест по значимости анатомических и функциональных нарушений (Рубцова Н.В., 2006 г.).

Проведенный анализ частоты врожденных пороков развития (ВПР) у детей Чувашской Республики за последние 22 года в 1991 – 2011 гг. свидетельствует о том,