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POSTOPERATIVE LIFE QUALITY OF PATIENTS WITH SIALOLITHIASIS

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Abstract. Sialolithiasis is one of the most frequent obstructive and inflammatory diseases of the salivary glands, with an incidence of 50% of cases [1], while submandibular gland is affected in 80-85% of cases [2, 3]. It is characterized by presence of concrements [1, 4], composed of various mineral elements, preponderantly phosphorus and calcium, which are mainly located within the salivary glands' ducts. The aim of our study was to assess the patients' life quality after sialolithadenectomy and duct sialoliths ablation, using the Oral Health Impact Profile (OHIP-14) scoring system. The quality of patients' life at various postoperative terms does not depend on the type of surgery, but it depends on gender and on age.

Key words: sialolithiasis, concrements, submandibular salivary gland, OHIP-14.

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**ПОСТОПЕРАЦИОННОЕ КАЧЕСТВО ЖИЗНИ
БОЛЬНЫХ С СИАЛОЛИТИАЗОМ**

Аннотация. Сиалолитиаз является одной из наиболее частых обструктивных и воспалительных патологий слюнных желез, составляя около 50% случаев [1], тогда как поднижнечелюстная железа поражается в 80-85% случаев [2, 3]. Для сиалолитиаза характерно наличие конкрементов [1, 4], расположенных в протоках слюнных желез, состоящих из различных минеральных элементов, преимущественно фосфора и кальция. Целью нашего исследования была оценка качества жизни пациентов после сиалолитаденэктомии и аблации сиалолитов, посредством системы оценок "Oral Health Impact Profile (OHIP-14)". Качество жизни пациентов в различные постоперационные сроки не зависит от вида операции, но зависит от пола и от возраста.

Ключевые слова: сиалолитиаз, конкременты, поднижнечелюстная слюнная железа, OHIP-14

Introduction. Sialolithiasis is one of the most frequent inflammatory diseases of the salivary glands, characterized by obstruction of their ducts, with an incidence of about 50% of cases [1], while sialolithiasis of the submandibular salivary glands is diagnosed in 80-85% of cases [2, 3, 4]. Each sialolith consists of a peripheral part and a central part (nucleus) [3]. The predominance of the phosphorus and calcium was highlighted within the sialoliths, but also other chemical microelements such as carbon, oxygen, sulfur, magnesium, copper, zinc, zirconium, fluorine, nitrogen were reported [4].

Material and methods. The specific OHIP-14 [5, 6] questionnaire was applied for analysis of the life quality of 83 patients with submandibular gland sialolithiasis, treated by various methods. The study group included 48 males and 35 females (19-76 years old), with a mean age of 49.1 ± 1.5 (95% CI: 46.02-52.15) years. Depending on patients' age, two subgroups were established: subgroup 1 (patients aged <40 years), and subgroup 2 (patients aged >40 years).

According to diagnosis, the patients were also divided into two subgroups: subgroup 1 (n=32), included patients after sialoliths ablation from the main submandibular duct, and subgroup 2 (n=51), was represented by patients after

sialoliths adenectomy. The life quality analysis was performed at a temporary interval from 1 to 80 months after surgery, with a mean of 29.4 ± 2.4 (95% CI: 24.58-34.22). In 56 (67.5%) of patients, the assessment was performed after one year postoperatively.

Results. The quality of life after treatment was analyzed depending on the type of surgery. For the entire sample size, the OHIP-14 value ranged between 8-44, with a mean value of 16.1 ± 0.7 (95% CI: 14.80-17.42), ($p=0.482$). In subgroup 1, the mean value of those parameters was 17.5 ± 1.4 (95% CI: 14.65-20.54), and in subgroup 2, the mean value was 15.2 ± 0.5 (95% CI: 14.06-16.29). The graphical analysis of OHIP-14 indices depending on the method of surgical treatment in sialolithiasis is presented in figure 1.

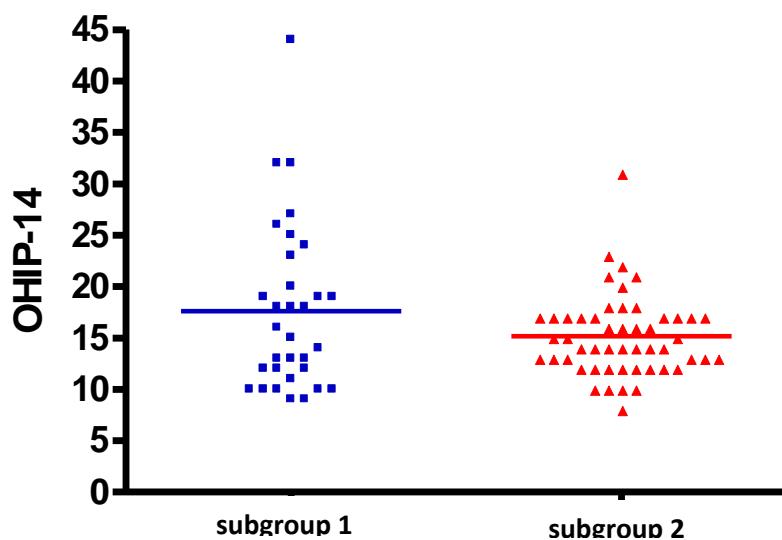


Fig.1. Postoperative OHIP-14 values of patients with sialolithiasis.

Our data showed that the quality of patients' life at various postoperative terms does not significantly depend on the type of surgery.

In males the mean value of OHIP-14 was 14.7 ± 0.6 (95% CI: 13.51-16.07), and in females it was 17.9 ± 1.2 (95% CI: 15.38-20.45), with a statistically significant difference ($p=0.033$). The graphical representation of OHIP-14 values depending on gender is shown in figure 2.

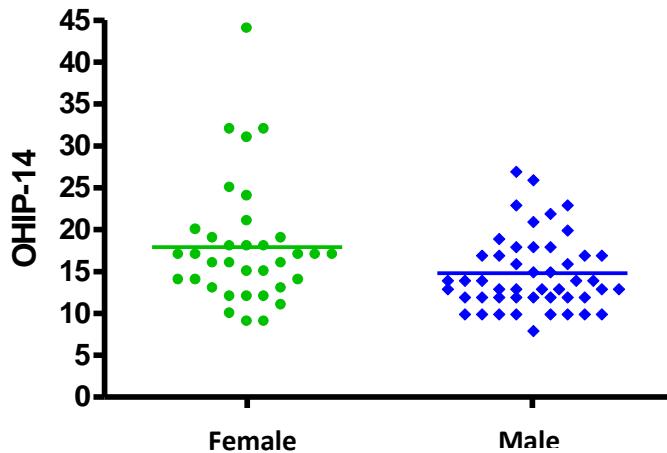


Fig. 2. OHIP-14 values depending on gender.

As a result of our study, it was revealed that female-patients were more concerned about their postoperative life quality, in comparison with male-patients. This fact can be explained by a higher psycho-emotional lability of women.

In patients up to 40 years old, the mean value of OHIP-14 was 12.5 ± 0.6 (95% CI: 11.18-13.78), and in the group over 40 years old, the mean was 17.3 ± 0.8 (95% CI: 15.74-18.94), with a statistically significant difference ($p < 0.001$). Thus, patients aged >40 years were subdivided into 4 groups according to age decade. Our results showed that OHIP-14 after surgical treatment depends on patients' age. The results on the quality of life depending on the age decade are presented in Table 1.

Table 1.
Assessment of the quality of life in different age groups (>40 years)

| Age (years) | 41-50 (1) | 51-60 (2) | 61-70 (3) | 71-80 (4) |
|---------------------|----------------|----------------|----------------|----------------|
| Number of patients | n=25 | n=21 | n=10 | n=6 |
| OHIP-14 (M \pm m) | 14.4 ± 1.1 | 16.1 ± 0.5 | 22.3 ± 2.9 | 25.7 ± 1.5 |
| 95% CI | (12.36-16.52) | (15.08-17.02) | (15.73-28.87) | (21.87-29.46) |

* p-value: $p_{1-2} > 0.05$, $p_{1-3} < 0.05$, $p_{1-4} < 0.001$, $p_{2-3} < 0.05$, $p_{2-4} < 0.001$, $P_{3-4} > 0.05$

The obtained data showed that quality of life according to the OHIP-14, progressively decreases depending on the age that is probably conditioned by dental pathology. The assessment of the life quality applying a specific questionnaire for dental pathology demonstrated that the quality of life in patients who underwent sialolithsadenectomy or duct sialoliths ablation does not differ significantly statistic.

The factors with negative impact on the OHIP-14 index were related to females and to advanced age patients. In 3.57% of patients after ablation of the duct sialoliths, recurrence of the sialolithiasis, with a mean value of 23.2 ± 11.2 months was observed. Analysis of the recurrence showed that it depends on the number of concrements extracted during the primary intervention, but that fact did not influence the recurrence rate ($p > 0.05$). In all cases of recurrence, repeated interventions were performed: ablation of the duct calculus ($n=3$) and sialolithsadenectomy ($n=2$).

Prognosis of sialolithiasis recurrence according to the Kaplan-Meier method has shown that 95% of operated patients would not have recurrence for 75 months postoperatively (Fig. 3).

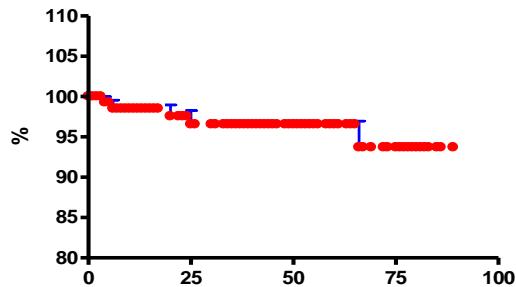


Fig. 3. Prognosis of sialolithiasis recurrence according to Kaplan-Meier. As a result of the current study, a diagnostics and treatment algorithm for sialolithiasis was developed (Fig. 4).

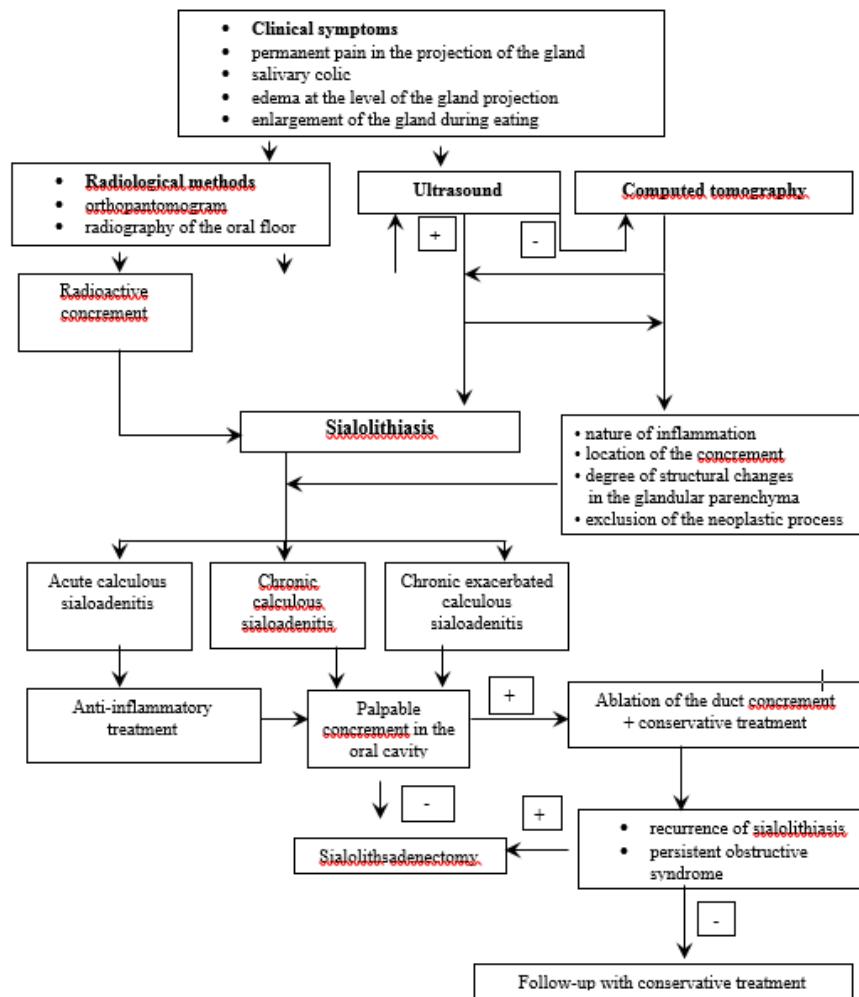


Fig. 4. Diagnostics and treatment algorithm of patients with sialolithiasis.

Conclusions. The life quality of patients with sialolithiasis at various terms after ablation of the duct concrements and sialolithsadenectomy does not differ. The OHIP-14 index was influenced only by the patient's gender and age, but it did not depend on the type of surgery. Our results highlighted the recurrent sialolithiasis in 3.57% of cases and it was revealed only after ablation of the duct sialoliths. According to the obtained data, 95% of operated patients did not have recurrence of sialolithiasis for 75 months after surgery.

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