OPTIMIZATION OF THE TRANSORAL METHOD OF ACCESS IN PATIENTS WITH NEOPLASMS OF THE PARAPHARYNGEAL SPACE

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Summary. Primary tumors of the parapharyngeal space are rare and account for up to 0.5% of all neoplasms of the head and neck. 70-80% of these neoplasms are benign, 20-30% are malignant ones. Surgical treatment is the main method of treatment of tumors. The influence of a modified transoral access method on the presence of complications in the postoperative period was investigated. A comparison of various methods of transoral access in patients was carried out, by studying the presence of local complications and quality of life. The advantages of the modified transoral method of access are shown. The obtained results are discussed.

Keywords: parapharyngeal space tumor, transoral approach, prestyloid space, poststyloid space.

Introduction. Primary tumors of the parapharyngeal space (PPS) are rare and account for up to 0.5% of all neoplasms of the head and neck [2–4]. 70-80% of PPS
neoplasms are benign, 20-30% are malignant ones. Most tumors of the parapharyngeal space originate from the salivary glands or have a neurogenic origin. Metastatic lesions and lympho-reticular tumors are also observed in this area [5,6]. Depending on the location, these formations are divided into pre-styloid localization and post-styloid localization [1, 5]. Surgical treatment is the main method of treatment of PPS tumors. PPS is a complex structure that contains large blood vessels, cranial nerves, several multidirectional muscles, and the bones of the skull and mandible. Because of this, the PPS is very narrow and difficult for surgical access [7,8]. The strategy of surgical treatment of PPF tumors - from preoperative examination to the method of surgical intervention - remains debatable. This is not only due to the difficulty of access, but also due to the presence of numerous postoperative complications [9]. Transoral access provides a direct path to tumors through the oropharynx [10,11]. When using the transoral method of approach, there are almost no typical postoperative complications characteristic of transmandibular and transcervical approach options [3,11]. At the same time, transoral approach has some disadvantages. Sometimes a complete visualization of the operating field is not enough. This complicates the dissection and selection of neoplasms that do not have a dense capsule, and also does not provide sufficient intraoperative control of large vessels [7].

Objective. The aim of this study was to optimize the transoral method of access during the removal of PPS tumors, to improve intraoperative control over adjacent structures and to reduce the risks of intraoperative and postoperative complications.

Patients and methods. The average age of the patients was 47.3 years (range 25-69 years). There were 23 women, 20 men (Fig. 1).

Gender distribution

![Gender distribution of patients](image)

Fig. 1. Gender distribution of patients

The following complaints were observed in patients: feeling of a foreign body in the throat, headache, nasal congestion, voice change, difficulty swallowing, sore throat, pain in the parotid area, hearing loss on the affected side, difficulty in nasal breathing, tinnitus, neck pain, the presence of swelling on the neck. During the objective examination, the following was observed: bulging of the side wall of the pharynx, tonsil, paresis of the vocal fold on the affected side, presence of swelling, asymmetry of the neck.

The inclusion criteria were the following: the presence of a clear capsule in neoplasms according to CT or MRI studies, benign neoplasms. Exclusion criteria were
the glomus nature of neoplasms and intensive blood supply and the presence of
evessels located in the thickness of the neoplasm.

In the patients of the 1st group (16 patients), an incision of the mucous
membrane was performed according to the generally accepted method of transoral
access, namely: along the front bracket of the palatine tonsil of the affected side from
the base of the tongue to the soft palate[12].

In patients of the 2nd group (20 patients), the incision of the mucous
membrane was made along the posterior palatine bracket (lateral wall of the
pharynx) from the root of the tongue to the top, with the possibility of continuation
in one or another direction in the presence of a large neoplasm. In this way, it was
possible to preserve the architecture of the palatine tonsil and soft palate.

Results. The distribution of neoplasm location by groups was as follows:

![Fig. 2. Distribution of patients depending on the location of neoplasms
(prestylloid and poststyloid space)](image)

Testing of the null hypothesis that the difference between groups was due to
chance for continuous data with a normal distribution was performed using analysis
of variance for continuous data with a normal distribution.

The number of patients with pre- and post-styloid location in both groups was
compared using the Pearson chi-square method. According to the method, no
statistically significant difference was found (p=1). The sizes of neoplasms in patients
of the 1st group varied - from 0.5 to 7 cm, in the 2nd group - 0.3-8.2 cm. We evaluated
by using the Kolmogorov-Smirnov test, there are no statistically significant difference
in the size of neoplasms was found between the groups (p=0.32).

To evaluate the results of accesses, the presence of recurrence or residual
tumor after surgical treatment and the presence of postoperative complications at
different times were assessed.

The criteria for radical tumor removal (R0 type operation) were: removal of the
tumor in one unit, the presence of an intact capsule, and the absence of signs of
residual tumor according to the data of radiological studies in the postoperative
period.

Radical removal of the neoplasm was carried out (R0) in 15 (93.75%) patients
of the 1st group. R1 (incomplete resection), in which relapse was observed in 1
(6.25%) patient. The latter was due to the absence of a capsule in the neoplasm and tight adherence to the internal carotid artery (ICA).

18 (90%) patients of the 2nd group also underwent radical removal of the neoplasm (R0), 2 (10%) patients underwent incomplete resection of the neoplasm (R1), and 1 patient had a recurrence 6 months after removal of the neoplasm. No statistically significant difference was detected using the Pearson chi-square test (p=1).

Local complications (intraoperative and in the early postoperative period) were also evaluated. In patients of the 1st group, these complications were observed in 4 (25%) patients (bleeding, necrosis in the wound area, and suture failure).

In patients of the 2nd group - local complications were observed in 1 patient (5%) - suture failure in the early postoperative period.

All patients were surveyed using the EORTCQLQ-HN35 questionnaire, according to which patients indicated changes in their physical and psychoemotional state during the last time. According to the questionnaire, the average number of scored points was evaluated, as well as the most characteristic items in the questionnaire, where patients experienced discomfort and impaired quality of life.

The average number of points on the 7th day after surgery according to the EORTCQLQ-HN35 questionnaire in patients of the 1st group was 72 points. In the 2nd group - 58 points. 1 month after surgery, the average number of points in patients of the 1st group was 50 points, in patients of the 2nd group - 37 points (Fig. 3).

Fig. 3. Results of surveying patients using the EORTCQLQ-HN35 questionnaire 7 days and 1 month after surgery
Discussion. We used the generally accepted technique in the 1st group, performing transoral approach. Analyzing the use of this approach method, we see that less attention is paid to the preservation of the soft palate, the anterior arch of the palatine tonsil and the palatine tonsil itself, and, accordingly, the functions of the pharynx in the postoperative period.

According to our observations, this in turn contributes to disorientation between the tissue of the neoplasm and the tissue of the tonsil during surgery, more traumatization, more bleeding during the operation, as well as a violation of the physiology of the pharynx in the postoperative period. Also, after performing this method of access, we observed an increase in intraoperative trauma and a subjective worsening of the postoperative period course.

We improved the method of transoral surgical access for the removal of PPF neoplasms in the 2nd group, by developing an optimal surgical technique that would reduce invasiveness, trauma, and contribute to the preservation of the anterior palatine arch, palatine tonsil, and soft palate, and improve the recovery of pharyngeal functions in the patient. postoperative period. In our opinion, the advantages of this method are the following:
- better visualization of the operating field;
- less intraoperative bleeding;
- less pronounced pain syndrome in the postoperative period;
- soft palate and palatine tonsil are not involved during access;
- in the postoperative period, rapid healing and restoration of oropharyngeal functions.

Conclusions. This technique of the transoral method of approach allows to reduce invasiveness, trauma and contributes to the preservation of the anterior palatal arch, palatine tonsil and soft palate. It also accelerates recovery of pharyngeal functions and improves the patient's quality of life in the postoperative period.

References:

