

SYLWIA KOLASA

Maria Curie-Skłodowska University in Lublin
Department of Logopedics and Applied Linguistics

Diagnosis and speech therapy patients after resection and reconstruction surgery base of oral cavity cancer

SUMMARY

Implication of that kind of treatment are dysfunctions of oral-facial-larynx complex which consists of disorders of functions such as breathing, swallowing, chewing and articulating.

The main goal of this article is to present diagnostic methods used to identification of mentioned above dysfunction complex and to describe selected techniques corrected level of muscles tension which had influence on improvement of articulation, swallowing function, chewing and breathing processes after resection and reconstruction actions in cases of oral cavity cancer.

Improving patients shape after resection treatment in oral cavity area is very complicated and depends on many various factors. Applying selected techniques corrected level of muscles tension in oral cavity area which is a necessary requirement for later speech therapy. Effects of therapy after resection and reconstruction treatment depend on cooperation of multidisciplinary team of specialists in surgery, oncology, physiotherapy and speech therapist area and many other medicine areas. Rehabilitation implemented in correct way in cases of oral cavity cancers influents positively on quality of patient's life.

Keywords: base of oral cavity, oncology, reconstruction, the oral cavity cancer, speech therapy.

INTRODUCTION

Every year in Poland there are over 7 thousands of new cases of oral cavity cancer and about 3,5 thousands of deaths caused by this disease. Main cases of this particular group of cancer illnesses in Polish population are tongue cancer and base of oral cavity cancer. These types are take 2nd and 3rd place right after larynx cancer. It is strongly recommended to notice that these types are showing tendency to rise. 50% of patients with oral cavity cancer survive for 5 years. De-

spite the progress and development of diagnostic methods, surgery techniques and additional treatment percentage of deaths did not change for past decades. Main causes of these frightening statistics are regressions of illness, metastases to local lymph nodes or recurrent tumors in nearby areas. It seems that surgery treatment are related with chemotherapy and radiotherapy isn't really effective but failures are linked with lack of clear breakthrough in therapy of oral cavity cancers, prevention programs and low level of health education which could bring down percentage of deaths among people with cancer in head and neck area. Research for new methods of treatment and ways of rehabilitation of patients with oral cavity cancers is still in progress.

Carcinomas are characterized by very long incubation period which means that there can pass many years from start of exposition to first symptoms. Patients are mostly men in age between 50 and 60 years however nowadays there are more and more often patients in age below 40 years. Progress of illness is much more aggressive and metastases to lymph nodes occur much more often if it comes to younger patients.

Non-smokers and people who do not use alcohol are different group. Evolution of oral cavity cancer in this group is related with HPV infections and herpes simplex virus. Other causes of cancer growth are addiction to tobacco (smoking and chewing), usage of marijuana (especially by young people), genetic load, immune shortage, low level of vegetables and fruits consumption, non fitting dentures, insufficient hygiene of oral cavity and teeth, dental caries, ferric substances shortage, chronic oral cavity inflammations, chronic irritancy of oral cavity with high temperature, spicy dishes or UV radiation (Becker, Naumann, Pfaltz 1999).

Symptoms of evolution of oral cavity cancer are non-healing ulcers in oral cavity, hyperkeratosis, dry mouth or salivation, rasping or inarticulate speech, unpleasant breath, crazing teeth, swallowing disorders, body weight loss, tumor in neck area suggesting possibility of metastases to lymph nodes, in later phase pain radiating to ear and neck, bleeding or bloody saliva, indurations or nodes in oral cavity. The most common symptom of oral cavity cancer that urge patients to visit doctor is long lasting pain. It occurs relatively late so patients show up with advanced stage of disease (Kordka 2007; Latkowski 1998; Lewandowski 1999).

Replenishing the decrements after surgery treatment of oral cavity depends on size, localization and quality of remaining tissues. Filling small gaps is possible by moving closer or translocating mucous membrane tissues of cheek or tongue. For replenishing bigger areas it is necessary to reallocate tissues from tissues located in further anatomical areas. By using skin patches, skin-muscular patches, stalked or unfettered with vascular anastomosis (Wierzbička, Pabiszczak, Pazdrowski, Szyfter 2006).

Table 1. Types of reconstructive flaps used to supply the resulting cavities.

Reconstruction patch	Location of replenishment
Stalked skin-muscular patch from pectoralis major muscle (Fig. 1.)	Neck, middle and lower 1/3 part of face, jaw
Stalked skin-muscular patch from sternocleidomastoid muscle	Neck, lower part of face, lips
Stalked skin-muscular patch from latissimus dorsi muscle	Neck, lower face area, occipital area, temporal area
Stalked skin-muscular patch from rhomboideus muscle	Lateral and lower face area – ear, parotid area, lateral face area, frontal and back parts of neck
Stalked skin-muscular patch from temporal lobe	Eye socket, forehead, cheek, processus mastoideus, upper jaw
Stalked skin-muscular patch from platysma muscle	Lower and middle part of face, lower lip, frontal neck's section and processus mastoideus
Stalked skin-muscle patch from under hyoid muscle (Fig. 2)	Base of oral cavity, the mucous membrane of the cheek, hard palate and parotid area

Reconstruction surgery development and implementing microsurgery techniques allowed using spare simple patches (skin-lipid, skin-fascial, muscular, fascial) and complex (skin-muscular, skin-muscular-bone). Spare patches can be

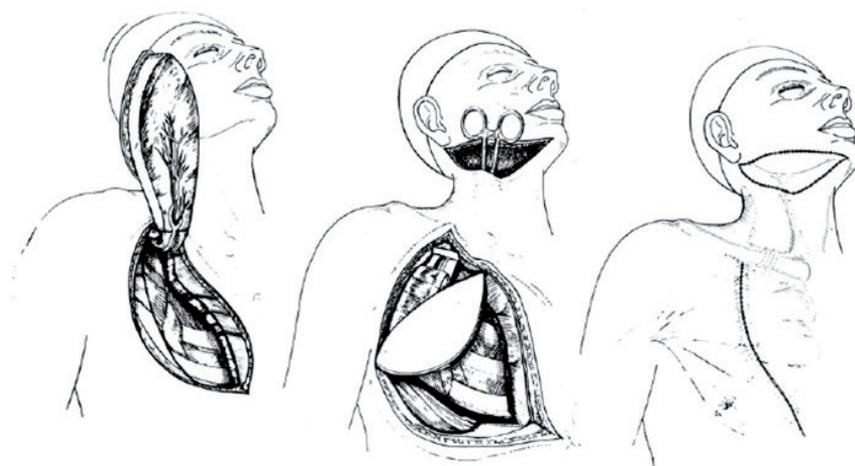


Fig. 1. Sampling technique pedicle lobe of the pectoralis major muscle (by Silver).
Source: Wierzbicka, 2006

translocated to various body areas and used for replenishing any tissue decrements. Mostly used patch for replenishing decrement in base of oral cavity area is patch taken from radial part of forearm, lateral part of arm or thigh, from scapula area or from rectus abdominis muscle. Best effects of swallowing and articulating after resection of base of tongue, tongue's core and base of oral cavity are achieved with using spare patch from forearm area (Fig. 3) (Wierzbicka, Pabiszczak, Pazdrowski, Szyfter 2006).

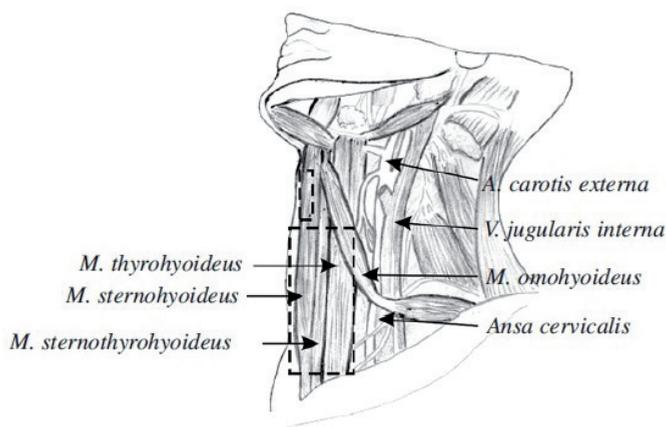


Fig. 2. Anatomy of the infrahyoid muscles and neck. The dashed line represents the place of thyroid gland. Source: Wierzbicka 2006



Fig. 3. A. Schematic forearm vessels. B. Collecting of the flap from forearm for the allograft. Source: Wierzbicka, 2006

Decrements in jaw range are replenished by fragment of fifth rib if reconstruction material is taken from pectoralis major muscle. If the spare patch is taken from forearm area then the bone part for replenishing jaw decrement is a fragment of radial bone. Jaw can also be reconstructed by using microvascular patch from fibula and iliac bone. Oral cavity decrements along with bone fragments are replenished by using rhomboid muscle patch and scapula crest. It portends best for the future to use microvascular fabric patch from fibula. Currently one of choice

methods is jaw reconstruction with titan tiles shaped as resected fragments. They are mount with screws to the rest of jaw to achieve continuity and jaw's shape (Wierzbicka, Pabiszczak, Pazdrowski, Szyfter 2006).

OWN MATERIAL

Eight people were put through an examination: 3 females aged 53-65 and 5 males aged 39-62, treated at Otolaryngology and Larynx Oncology Clinic SPSK4 in Lublin and at Head and Neck Oncology Clinic in Oncology Centre in Warsaw. Four patients had a surgery treatment related with chemotherapy and radiotherapy, 3 patients had only chemotherapy as an additional treatment and one of patients had radiotherapy without chemo. Regarding the similar character of surgery treatment, extensiveness of tumor and usage of reconstruction patch there were four groups of patients distinguished.

First group (G1) included patients after total resection of oral cavity and a fragment of jaw. Decrements of soft tissues were replenished with skin-muscular patch from pectoralis major muscle, spare part from forearm and thigh. Bone fragments were used from iliacus bone and fifth rib.

Second group (G2) separated in examination included patients after resection of oral cavity base, part of jaw and tongue. Most quantity of articulation disfunction is found in this group. Pectoralis major muscle patches and fifth rib fragments were used for reconstruction.

Next group (G3) contained patients after resection of oral cavity base, tongue and jaw fragment. In this group there were found function disorders of temporomandibular joint. Soft tissues decrements were filled with pectoral major muscle patch, bone decrements with fifth rib.

The last group (G4) was examined regarding the kind of patch used for reconstruction. There were two sort of patches used in this group – spare and stalked. Spare patches were taken from thigh and from forearm. Stalked patch was a skin-muscular patch from pectoralis major muscle.

EXAMINATION TOOLS

To diagnose speech disorders after resection and reconstruction treatment properly there is necessary to assess motor abilities of articulation organs, which can be done using "Speech organ motoric efficiency examination" drawn up by T. Woźniak and Z. M. Kurkowski at "Department of Logopedics and Applied Linguistics in Lublin". Motoric efficiency examination of speech organs provides information about active movement (made by patient himself) of articulators which is carefully selected and occurs in certain anatomic plane. It should be

remembered that after reconstruction treatment despite active movement remains i. e. lifting tongue crest by oneself, muscular tension can be weak enough that disfunction will appear during complex movement i.e. chewing, swallowing or articulating. Therefore when making an assessment of speech organs and any doubt will show up there should be made an assessment of tongue muscle strength and its tension and of muscles responsible for movement In temporomandibular joint. We can make that kind of judgement throughout adjusting resistance force opposite to this movement.

Temporomandibular joints should be diagnosed regarding pain with provocation tests such as Knough-Poulsen – pushing a little roller between lateral teeth. In case of pain on side of pushing movement the problem is on muscular side. If the pain is decreasing the problem is related with joint pathology. If the pain appears on the opposite side, we can state that it's a joint disorder. Second test is very similar – the little roller is placed between frontal teeth. Biting it causes lifting of head of processus condylius of mandibular. Compression in jopit occurs and if pain appears we can suspect a translocation of disc in that joint. Disorder is a joint matter because in normal situation that disc would cover the joint area of processus (Gorzalek, Gorzalek 2006; Kleinrok 2012; Kogut, Kwolek 2006; Mierzwińska-Nastalska, Kostrzewa-Janicka, Gawor 2010).

In case of pain demonstration we can assess them using the VAS Scale (Visual Analog Scale). VAS is a visual and analog scale of pain assessment in a form of 10 cm ruler. Patient points the intensity of pain with his finger, from 0 which is described as painless to 10 which means unbelievable pain (J. Gorzalek, M. Gorzalek 2006).

I used palpation examination to assess muscles tension (masseter, temporal, pterygoid lateral, digastric). The masseter examination is an inside-ear examination and includes anterior outer surface of the muscle (left and right). The study performed in a circular motion II–IV finger. Temporalis muscle investigate outside-ear , forefinger evaluate temporal muscle front , the next finger temporal middle finger penultimate posterior temporal muscle . The therapist gently pinches the muscle to the temporal bone , and if you feel pain, please go to point the finger , which caused pain. Also check the lateral pterygoid muscles by outside-ear side. We will evaluate their bottom trailers located behind the angle of the mandible. Digastric muscle examination is quite difficult and should be combined with isometric tension . Therapist with one hand opposed to visiting the jaw , it will cause tension and visibility of the front of the belly of the muscle. Then the investigator grabs the other hand makes palpational study of muscle belly . It is worth noting that the digastric muscles (allocating the mandible) and the lateral wing (initiate the lowering movement of the jaw) have no neuromuscular spindles , so not working principle of mutual influence. The contraction occurs as a result of excitation

and oppression touch receptors located in the periodontal , oral mucosa , and the front part of the hard palate (Gorzalek, Gorzalek 2006; Kleinrok 2012; Kogut, Kwolek, 2006; Mierzwińska-Nastalska, Kostrzewa-Janicka, Gawor 2010).

Another research tool needed to diagnose speech disorders arising after the removal of a malignant tumor of the oral cavity is the „Questionnaire Picture (word) „, developed by G. Demel . The questionnaire developed by G. Demel is intended for children, so I would recommend that it be modified (i.e. swap drawings on photographs) to be suitable for adults (Demel 1996).

DIAGNOSIS

Table 2. Diagnosed functional disorders

GROUP	DIAGNOSED
G1	<ul style="list-style-type: none"> — dysphagia in the first and second phase manifested by retention of food in the mouth and chokes; — problem with the elevation of the mandible and the formation of billets nutrients; — retention of food in the throat (very often occurs in patients after radiotherapy); — lack of control caused by the leakage of saliva in shallowed vestibule of the oral cavity; — restriction of movements of the tongue visible reversing backwards, lifting the back and top upwards; — tearing chin that caused the dysfunction of the lower lip, revealing himself when lifting it upwards, slipping and rounding of the lips, smacking, whistling, or the strong tightening of the lips,
G2	<ul style="list-style-type: none"> — scarring, which largely restrict the work of the tongue, lips, temporomandibular joints; — dysphagia in the first and second stage; — retention of food in the mouth; — shallow vestibule; — difficulties in forming, biting off and chewing food bites caused by disorders of the temporomandibular joints; — impaired muscle function of language, which was evident during the rise of the back and the tip of the tongue, reversing it back, lowering, tongue touching the chin and nose, circular movements; — impaired functioning of the lips (the problem of strong clamping, rounding and retraction mechanism, stretching, alternating to overlapping of the lower lip and the upper cmokaniem, whistling); — difficulties with mimic facial movements, which are caused by extensive scarring, — scarring on his chest and neck contribute to respiratory track peak,

G3	<ul style="list-style-type: none"> — disorders in biting and forming billets of food and swallowing in the first phase; — fuction mandibular deviation toward the operated and the adduction of the mandible also came rotational movement to the inside; — pain located in the temporomandibular joint; — tinnitus, which were the cause of the impaired capacity of the temporomandibular joints; — swallowing disorders in the first phase; — hypotension orbicularis mouth; — scarring, which led to restrictions on facial expression,
G4	<p>Groups of patients were tested for the type of flap reconstruction. The spare patches were taken from the thigh and forearm, while the skin-muscle patch was taken from the pectoralis major muscle. In this group of patients diagnosed disorders are very similar in nature to those which I have observed in the previous people, but methods of improving speech organs exhibit some differences.</p>

Articulation disorders after base of oral cavity cancers are complex and depend on the size of the resection area. Faulty articulation after reconstructive surgery of oral cavity base refers to sounds that require organs of articulation, ie consonants. Vowels are also distorted, but not as often as consonants, because their implementation is not done by a short circuit or slots.

Patients who experienced complete resection of oral cavity base have abnormalities of articulation of middle-tongue consonants [ś], [ź], [ć], [ź], requiring elevation of tongue core upwards and back-tongue [k], [g]. After the reconstruction of mandibular dysfunction appear from the temporomandibular joints, which are the cause of the erroneous implementation of vowels [o] and [a], which require the implementation of the joint work, or leave the jaw downwards. Reconstructing of oral cavity base, jaw and tongue leads to a partial loss or absence of mobility of its front part, in such a situation there are disturbed phonics coronal consonants: [s]; [z]; [c]; [ʒ]; [č]; [ž]; [š]; [ž]; [r]; [l]; [t]; [d]; [n]. The final cause of the faulty execution are created scars on the face or mouth. Scarring occurring on the face, cheeks, lips often lead to muscle contractures. In such a case will be disturbed phonics vowels and consonants. Vowels were articulated sounds wrong [e], [i] and [u], which require work lip (stretch to the sides and pull). Consonants are in need of lip phone: labial [p], [b], [m] – short circuit is formed through clenched lips; coronal [s], [z], [c], [ʒ], [č], [ž], [š], [ž] – where the implementation of [s], [z] lips are flattened, adhere to the teeth, receding corners of the mouth and lower lip tilts slightly downward. With the articulation of [c], [ʒ] lips are arranged like a smile; [č], [ž], [š], [ž] require rounding of the lips and eject them forward. In addition to the labial vowels and consonants frontal-tongue we have middle-tongue [t], [t̚], [ć], [ʒ], which are implemented with rounded, put forward to the front of the lips. It should be taken under consideration that the speech disorders that occur

after reconstructive surgery of the oral cavity are individual and closely associated with the course of the operation, anatomical dysfunctions, which co-exist with the established compensation. Do not assume that after complete resection of oral cavity base will only be disturbed phonics or velar middle-tongue consonants because we do not know what mechanisms worked in a given patient after surgery. Therefore, the diagnosis of speech disorders after surgery, we need to look at each individual patient.

LOGOPEDIC TREATMENT

The purpose of the proceedings in the case of speech therapy after reconstructive operations covering the bottom of the mouth is to improve articulation, swallowing function, learning proper breathing. All targets must focus on getting the patient the skills that will enable him to the smooth functioning of the environment. Keep in mind that the treatment must be individually adjusted to the patient and initiated as soon as possible after healing surgical wounds. Preliminary rehabilitation activities are introduced in the first weeks after surgery are learned and rely on the normal breathing and swallowing saliva. It is best to start them from the moment when the patient is disconnected from the probe nutritional and stops breathing through a tracheostomy tube. To improve speech organs in cases after reconstruction of oral cavity area in addition to standard methods of exercise I've used the physiotherapy and musculo-fascial osteopathic techniques.

G1 patients started therapy with breathing exercises combined with elements of relaxation in order to: learning proper breathing, mute patient, gain confidence and achieve overall mental relaxation. The next step was the use of massage for chewing muscles, which affect the proper swallowing, rounding nutrients, the problem of lifting the jaw. Improvement of muscles of tongue and lips was made, with an emphasis on circular muscle paragraph. Performed eccentric and concentric work of the tongue muscles – (technique combinations of isotonic contractions and glossopharyngeal neuromobilization) are myofascial osteopathic techniques. Reconstructed oral cavity base muscles, which showed palpable connection loosened significantly by the use of the manual suprahyoid muscle relaxation. Manual manipulations were performed by positioning the second toe on both sides of the hyoid bone and the delicate moving toward dorsally . In addition to improving chewing muscles used the cover by taping belts. After working out the next stage of muscle tension was swallowing reeducation and correction, and / or inducing sound. To improve the implementation of sound in cases of post-operative oral cancer, we have to choose mechanical methods , aural and phonetic – mechanical. Each of these methods is preceded by a thorough explanation of how the patient laying organs of articulation for the implementation of individual sounds . You

can even prepare illustrations of the behavior of articulators at the time of pronouncing certain sounds (Kogut, Kwolek 2006; Mierzwińska-Nastalska, Kostrzewa-Janicka, Gawor 2010; Myers 2005; Zborowski 1998).

Patients G2 started speech therapy from relaxation techniques and breathing exercises, which were to teach the breathing path ventrolateral diaphragm. The next step was to develop scars of the face, neck, chest after the application of appropriate techniques of classic massage, in order to make them more flexible. In addition to massage I used to mobilize soft tissue in the area of scars and after radiotherapy. In improving motor organs of articulation exercises focused on the upright tongue, chewing muscles and lips. For muscle strengthening exercises work included self-therapy, which is performed by the patient consisted of a conscious tensing muscles hypotonic (isometric exercises – tensing to whistle, exercise conducted - reversing the jaw with hand). For self-therapy also include PIR – Post Isometric Relaxation – which consists of muscle relaxation through their stretching and loosening muscles antagonistic to him. The most effective way is the relaxation of muscles involved in the tightening of teeth: the rumen, temporal and winger side. To perform self-therapy, the patient should rely fingers incisally lower teeth. Relaxation involves gentle stretching and slow muscles in the caudal direction. Before performing a stand-alone exercise, the patient should be instructed on what to look for. PIR includes cycles consisting of three phases. The first phase of this stretch of the muscle to the first, the slightest feeling of stretching or pain and then stop motion stretching. The second phase consists in applying a light pressure against resistance, triggering tension in the isometric (without making a move) the strength not exceeding 20% of the maximum value. Voltage takes about 8 seconds to muscle in defense of the conditioned reflex neurological relaxed and lengthened (inverse reflex muscle stretching). The last phase is to cease to press against the resistance, occurs when muscle tension relaxation all in the same position – without changing the position of the various parts of the body. After this is done slowly moving the body part in the direction of stretching the muscles. It is important not to stretch the muscle by reducing the return movement in the joint. The whole cycle is repeated again two to four times. An important element in the course of stretching is free, deep breath, because it also relaxes our body. The next step was practicing proper swallowing and improving the implementation of sound (Chaitow 2011: Kogut, Kwolek 2006; Mierzwińska-Nastalska, Kostrzewa-Janicka, Gawor 2010; Myers 2005; Zborowski 1998).

Group G3 as in previous cases started learning the proper breathing and relaxation exercises. The next step was the treatment of the temporomandibular joints, which were used to mobilize the game slip joint, in order to obtain the proper range of active movement of the mandible. For the correctness of the first

step will be to restore the correct slip in the temporomandibular joint. Mobilize these places, which are limited by pain or resistance. Always apply the principle of opposite movement and painless range. If such a situation occurs that slide causes pain, the movement should be performed in the opposite direction. However, if the slide will be limited by resistance, we mobilize in the same direction, gradually increasing the range of motion. Mobilization is done by hand grip outside of mouth and with other hand we stabilize the head. Movement should be repeated several times, leading from start to end of the range, and back to the starting position (Chaitow 2011; Kogut, Kwolek 2006; Mierzwińska-Nastalska, Kostrzewa-Janicka, Gawor 2010; Myers 2005; Zborowski 1998).

Mobilizations of trigger points are designed to elevate muscle tension and reduce muscle pain origin. Symptoms of trigger points cause pain at rest and during activity, limited mobility in a position stretching and shortening of the muscle. We deal also with impaired proprioception, balance, dizziness, coordination problems. Mobilizing external trigger points place put on the lateral surface of the mandible and alveolar yoke – the site of attachment of the temporal muscle (at the site of attachment of the rumen, on processus coronoideus and around the bottom of the temporal lobe) and around the temporomandibular joints around gland. We also pressure on the medial surface of the angle of the mandible, in the area of muscle attachment of the medial wing . Mobilizations extraoral trigger points are made on the surface of the tip of the medial and lateral coronoid mandible – the place of the temporal muscle, around the angle of the mandible and the zygomatic ridge – the site of attachment of masseter muscles and the periosteum of the jaw. In parallel with the improvement of arthritis were developed postoperative scars (Chaitow 2011; Kogut, Kwolek 2006; Mierzwińska-Nastalska, Kostrzewa-Janicka, Gawor 2010; Myers 2005; Zborowski 1998).

As an additional junctive therapy I used elements of osteopathy – craniosacral therapy, which consisted of stimulating the cerebrospinal fluid, tire tensions brain and spinal bones of the skull, to ensure the good functioning and regain balance throughout the body. The next step was to conduct a classical massage facial muscles and covering muscles with taping bands. In improving motor organs of articulation exercises focused on the general language and lip chewing muscles (in particular paragraph orbicularis). During exercise the organs of articulation also I focused on restoring normal swallowing and selection of the appropriate method for improving the implementation of sound.

Improving the post resection field in G4 group was dependent on the kind of lobe used for reconstruction. If a spare patch was taken from deltoid or thigh muscle then a post resection area should improve in a direct way by classical massage and/ or lymphatic drainage to strengthen muscles and reduce swelling. Massage is used to restore normal metabolism, improve blood circulation in the

muscles, strengthen or relax certain muscle, in addition to eliminate muscle pain origin and decrease swollen fields. We exercise to improve muscle also include the previously described mobilization of trigger points, muscle relaxation isometric, mobilization of suprahyoid muscle or using taping bands. To improve the temporomandibular joints we can apply previously mentioned mobilization, traction and slides, to reduce pain, increase range of motion in the joint and decrease the joint capsule contraction and muscles surrounding the joints. In addition, in any case, we will relax the muscles of the neck, which also affect the functioning of the muscles of the oral cavity due to the nearby muscle attachment (Chaitow 2011; Kogut, Kwolek 2006; Mierzwińska-Nastalska, Kostrzewa-Janicka, Gawor 2010; Myers 2005; Zborowski 1998).

If the procedure was to supply defects with pediculated patch of pectoralis major, in addition to techniques used directly on post resection area such as: classical massage, lymphatic drainage (involves the use of appropriate blows allow improved lymph circulation preventing the emergence of diseases caused by the congestion, as well as eliminating its congestive edema, inflammation, and lymph oncotic), mobilization of trigger points, PIR, and taping bands, we can use exercises based on muscle synergies. The synergy of muscle occurs when you are stimulating areas of the body that are not directly related to the area covered resection. Improving the muscles of the oral cavity, with the help of nearby muscle applies when you do not perform exercise directly on the post resection area as a result of radiation reaction. Such therapy requires the therapist and the patient's patience, motivation, commitment. For stimulation reconstructed mouth muscles can use the direct technique myofascial relaxation by rolling the skin in different directions and subcutaneous tissue in the neck, active myofascial relaxation in the region of the neck and shoulder girdle - in the area of muscle sloped, the descending part of the trapezius muscle and fascia and furrows muscle relaxation technique postisometric neck muscles or neuromobilization of sympathetic trunk of the cervical spine and the long nerves of the upper limbs (*ibid.*).

RESEARCH RESULTS

I've used the techniques and methods of physiotherapy significantly contributed to improving the functioning of the oral-facial-larynx complex. Remarkable effects brought craniosacral therapy, which caused acceleration of the entire therapeutic process. Tinnitus resolved through stimulation of the masticatory muscles. Pain within the temporomandibular joints subsided after using games and articular mobilization trigger points. Increase muscle „newly” created organs of articulation caused swallowing function improvement, and this goes also with articulation. In addition to the whole family implements the therapeutic process

helped keep the patient motivated to exercise. Appropriately selected speech therapy, focusing, inter alia, also on the expectations of the patient brought significant effects in the first few weeks of launch.

CONCLUSIONS

Proceedings speech therapy in group of people suffering from oral cavity base cancers starts only after obtaining the patient's health. During this period, we streamline operations motor-carrying-out „new” organs of articulation and struggle with the phenomenon settled compensation and individual skills, adaptive, occurring without our will. Compensation processes are not favorable phenomenon, and therefore require appropriate stimulation. Watt noted that the return of lost or improve the current functioning is not a permanent process and requires constant work.

One of the most important problems is to improve the functional rehabilitation of the organs of speech motor skills. Therefore, it appears very important to start speech therapy before surgery, reconstructive, to prepare the patient for changes in functional and aesthetic spectrum. At this stage, despite the presence of neoplastic lesions that cause difficulties in the movements of the organs of the oral cavity, we can examine how the articulation of individual sounds, efficiency motor speech organs, learn proper breathing, and explain to the patient what is the process of swallowing.

BIBLIOGRAPHY

- Becker W., Naumann H. H., Pfaltz C. R., 1999, *Choroby uszu, nosa i gardła*, BEL CORP Scientific Publications, Warszawa, s. 307–308, 367–369, 374–383.
- Demel G., 1996, *Kwestionariusz obrazkowy (wyrazowy)*, [w:] *Minimum logopedyczne nauczyciela przedszkola*, WSiP, Warszawa, s. 101–103.
- Chaitow L., 2011, *Techniki energii mięśniowej*, Urban&Partner, Wrocław.
- Gorzalek J., Gorzalek M., 2006, *Badanie układu ruchowego narządu żucia dla potrzeb fizjoterapii. Rehabilitacja w praktyce*, PZWL, Warszawa, s. 2–10.
- Kleinrok M., 2012, *Zaburzenia czynnościowe układu ruchowego narządu żucia*; t. 3. Czelej, Lublin, s. 15–26
- Kogut G., Kwolek A., 2006, *Zaburzenia czynnościowe układu ruchowego narządu żucia – diagnostyka i leczenie. Rehabilitacja medyczna*, Wyd. Lek. PZWL, Warszawa, s. 41–48.
- Kordka R., 2007, *Onkologia. Podręcznik dla studentów i lekarzy*, Via Medica, Gdańsk, s. 75–88, 93–100, 147–166.
- Latkowski B., 1998, *Otolaryngologia*, Wyd. Lek. PZWL, Warszawa, s. 242–245.
- Lewandowski L., 1999, *Onkologia szczękowo-twarzowa*, Wyd. Lek. PZWL, Poznań, s. 10, 81–83.
- Mierzwińska-Nastalska E., Kostrzewa-Janicka J., Gawor E., 2010, *Narząd żucia – diagnostyka i leczenie*, Wyd. Lek. PZWL, Warszawa, s. 13–26.

- Myers T. W. *Anatomy Trains*, Churchill Livingstone, New York, s. 129–183.
- Wierzbicka M., Pabiszczak M., Pazdrowski J., Szyfter W., 2006, *Chirurgia rekonstrukcyjna w operacjach onkologicznych raków jamy ustnej i gardła*, [w:] *Postępy w chirurgii głowy i szyi*, t. 1. Poznań, s. 16–25.
- Zborowski A., 1998, *Drenaż limfatyczny*, Perfekt, Kraków, s. 20–36.
- Zborowski A., 1998, *Masaż klasyczny*, Perfekt, Kraków, s. 372–396.