При підвищенні двох та більше показників – рекомендовано виконання оперативного втручання, яку буде направлене на дренування нирки з подальшим призначенням антибактеріальної, протизапальної та інфузійної терапії.

Висновки.

Таким чином, у результаті нашого клінічного дослідження можна із впевненістю сказати, що застосування цитокінів та біомаркерів раннього пошкодження нирок, у якості діагностичного критерію інфекційно- запального процесу, є цінним клінічним засобом при сечокам'яній хворобі.

Підвищення показників маркерів раннього пошкодження нирок вказує на наявність інфекційно-запальних ускладнень, до виникнення клінічних та лабораторних змін, майже у 50% випадків, в перші 12- 24 години.

Проведене дослідження дозволило розробити алгоритм обстеження та вибору методу лікування у хворих на сечокам'яну хворобу, що значно прискорить процес одужання і знижує ризик розвитку незворотніх процесів в нирках, тим самим забезпечити хворому повноцінне здорове життя.

Література.

1. Возіанов СО, Сайдакова НО, Старцева ЛН. Стан та перспективи розвитку урологічної служби України. Урологія. 2013; 17 (3):89-95.

2. Черненко ДВ, Черненко ВВ, Желтовская НИ. Лечение больных с резидуальными камнями почек после перкутанной нефролитотрипсии. Здоровье мужчины. 2014;3(50):116-118.

3. Пасєчніков СП. Урологія. Вінниця: Нова Книга, 2013. с. 218-236.

4. Черненко ВВ, Клюс АЛ, Савчук ВИ, Желтовская НИ. Особенности лечения и метафилактики фосфорнокислого нефролитиаза. В: Матеріали науково-практичної конференції «Актуальні питання сучасної урології, сексології, андрології». Дніпро, 2014. с.28-38.

5. Баранник СІ, Крижановський ІД, Білий ІБ, Баранник АС. Лікування та профілактика гнійно–септичних ускладнень і уросепсису після дистанційної літотрипсія. Шпитальна хірургія. 2013;3(63):118-119.

6. Shoag J., Haplern J., Goldfarb D.S., Eisner B.H. Risk of chronic and end stage kidney disease in patients with nephrolithiasis. J. Urol. 2014;192 (5): 1440-1445.

7. Уразаева ЛИ, Максудова АН. Биомаркеры раннего повреждения почек: обзор литературы. Практическая медицина. 2014; 3(80):125-130.

8. Клюс А.Л. Метафілактика фосфорнокислого нефролітіазу з урахуванням передумов виникнення рецидивного каменеутворення. [автореферат]. Київ; 2014. 19 с.

9. Geraghty R. [et.al.]. Shock wave lithotripsy outcomes for lower pole and non – lower pole stones from a university teaching hospital: Parallel group comparison during the same time period. Urol. Ann. 2015; 7 (1):46-48.

10. Довбиш МА. Патогенетичне значення порушень лімфатичної системи при обструкції верхніх сечових шляхів і запальних захворювань нирок та їх лікування: [автореферат]. Київ; 2006. 18 с.

11. Zhang J. [et.al.]. New potential solutions for the hemolysis of urinary phosphate calculi determined by an in vitro study. Urolithiasis. 2015; 43 (2): 147-153.

12. Turk C. EAU Guidelines on Diagnosis and Conservative Management of Urolithiasis. Eur. Urol. 2016; 69 (3):468-474.

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METHODS OF IMAGING USED FOR DIAGNOSTICS OF THE TEMPORO-MANDIBULAR JOINT DYSFUNCTION

Study aim: visualizing and analysis of the lateral and medial pterygoid muscle changes associated with the TMJ dysfunction using the MRI; comparing the obtained data to clinical ones in order to increase the diagnostics efficiency.

Materials and methods. The basic group was represented with 98 patients aged 18-65 years old, with clinical signs of the TMJ dysfunction (h=5-25). The author has introduced her own protocol including clinical study methods and the MR-tomograms analysis.

Results and discussion. The patients of the basic group had reliable difference in vertical size of the lateral pterygoid muscle upper heads, according to the anatomy. The author has analyzed and described lateral pterygoid muscles according to their anatomy basing on the MRI data. The study deals with morphometric and comparative analysis of the patients' chewing muscles according to clinical dysfunctions or complete healthy function. Considerable difference was observed in the lateral pterygoid muscles upper heads size according to the anatomic structure. Slight difference was noted regarding the lateral pterygoid muscle sizes in patients of the basic and control groups.

Complications. All patients of the basic group had morphological changes of the pterygoid and chewing muscles fibers of various degrees, depending on the expression and duration of clinical dysfunctions. So, the clinical symptoms in the patients with muscle-joint dysfunction of the TMJ is predominantly stipulated for the functional and morphological changes of chewing muscles, which should be considered while planning the treatment and making prognosis.

Key words: magnetic resonance tomography, temporo-mandibular joint, muscle-joint dysfunction, lateral pterygoid muscle, chewing muscle(masticatory muscle), morphometry, chewing muscle morphological changes.

Relevance. Review of the sources. Diagnosis of the muscle-joint dysfunction of the temporo-mandibular joints(TMJ) is rather relevant direction of modern stomatology, which is related to high incidence of the disease and its numerous clinical manifestations. According to foreign scientists and considering the author's personal studies, the pathology incidence in its various manifestation stages reaches 80-95% [1,2]. This is caused by disordered coordination of the chewing apparatus components, including: dental row, TMJ and chewing muscles articulation, which leads to the complicated complex of symptoms development. The chewing(masticatory) muscles significantly contribute into the TMJ dysfunction development. In 1980 D. G. Simons and J. G. Travell offered a theory of the reflex chewing muscles spasm nature, with the "trigger" areas appearing due to psychoemotional disorders. The foreign and Ukrainian scientists conducted numerous studies of relation of the lateral pterygoid muscle anatomy to the development of internal joint dysfunctions as well as occlusion pathologies [1,2,3,4]. Though, there is no unanimity expressed by the authors on the lateral pterygoid muscle anatomy and its effect into the TMJ dysfunction. The up-to-date sources don't present much information on the standard chewing muscles size in anatomical variations and dysfunction. The correspondence of the MRI data and clinical manifestations hasn't been studied sufficiently as well. Such studies are valuable because they make possible visualizing and assessing the interior chewing muscles: the medical and lateral pterygoid muscles are hardly accessible for outpatient diagnostics. MRI has recently become a main non-invasive diagnostic method. Only MRI provides for assessment of the pterygoid muscles structure, their functions and pathological changes.

Study aims: visualizing and analysis of the lateral and medial pterygoid muscle changes associated with the TMJ dysfunction using the MRI data, evaluating appropriateness of the method to clinical data in order to improve diagnosis process.

Materials and methods. 118 patients have been examined in the Stomatological medical center and Prosthetic stomatology Department affiliated to O.Bogomolets National medical university, collaborating with the diagnostic center "24". The basic group is represented with 98 patients (39 males, 59 females) aged from 18 to 65 years old, with clinical signs of the TMJ dysfunction (h=5-25). The control group is represented with 20 patients without dental-jaw deformities, complaints and clinical or roentgenological evidences of the TMJ dysfunction. The author has introduced her own protocol including clinical methods and the MR-tomogram analysis. The protocol made up a basis for the computer application program used for early diagnosis of the TMJ dysfunction. The clinical examination included: visual examination, chewing muscles palpation, TMJ auscultation, measuring amplitude and assessing trajectory of the mandibular motion. The MRI study was conducted with the field induction 1.5t (Siemens AG Wittelsbacherplatz 2 DE-80333, Muenchen, Germany). To obtain the muscle image with high separation power a specialized surface coil with high signal-sound relation and small field of vision was used. The MRI of the TMJ and chewing muscles was conducted on both sides in oblique-sagittal and oblique-coronal planes. The procedure was conducted in two stages: with closed and opened mouth positions, using T1 –weighted image (BI) and gradient-recalled echo of contrasts (GRE C). The obtained data were statistically processed using the Statistica (Statsoft) for Windows v.10 software. To detect appropriateness of the data distribution to standards, the chosen data are represented with mean arithmetic and standard deviates ($M \pm \sigma$), to analyze them comparatively Fisher dispersion test and Student criterion were used, in other cases– medians, lower and upper quartiles (Me [Q1; Q3]), using the ANOVA on ranks and Mann-Whitney criterion. To compare the qualitative signs $\chi 2$ criterion was used. Correlation analysis aided in assessing relation of quantitative data. The difference was considered significant with $p \leq 0.05$.

Results. Discussion.

Analysis of the MR-tomograms was conducted using the classification of three lateral pterygoid muscle anatomical types, which differ by the attachment of the upper muscle head [1]. In type 1 the upper head fibers are attached to the articular disc ad neck of the condylar process; in type II – they are separately attached to the articular disc. The lower head fibers in types I and II are attached to the condylar process neck. In type III of the lateral pterygoid muscle the upper head consists of two bundles: the upper bundle is attached to the articular disc, while the lower bundle is attached to the articular disc and condylar process neck; the attachment of the lower head is similar to the I-II types.

In the study 128 muscles (64.8%) have been referred to lateral pterygoid muscle type 1, 42 muscles (21.4%) – to type II and 26 muscles (13.3%) – to type III. Type II on both sides was observed in 68 patients(69.4%), type II – in 16 (16.3%) type III – in 6 (6.1%) patients.The rest 8 (8.3%) patients had various anatomical combinations. The control group showed the following: 22 muscles(55.0%) referred to type I, 12 muscles(30.0%) – to type II and 6 muscles (15.0%) – to type III. The attachment of the upper and lower heads

to the disc-condyle complex in most cases was visualized more distinctly with opened mouth position.

Morphometric study of the upper and lower heads of the lateral pterygoid, medial pterygoid and chewing muscles was conducted across the middle coronal muscle plane. The mean averages of the lateral pterygoid muscle upper and lower heads, depending on the anatomical structure types, which were detected in patients of the basic and control groups, are represented in table 1. The medial pterygoid muscle transverse length means in the control group were: 16.1 ± 2.4 mm on the right, 15.9 ± 2.4 mm on the left; that one of the chewing muscles: 14.4 ± 2.4 mm on the right, 14.6 ± 2.4 mm on the left.

The MR-tomograms of the control group patients had muscular tissue uniform slight hypointensive signal at T1 BI, isointensive signal at GRE C, compact position of muscular fibers with thin hypo- and hyper-intensive fibers at T1 BI and GRE C linear shaped regions – the connective and fatty layers, respectively. All patients had along the studied muscle fibers regions with hypointensive MR signal at T1 BI and GRE C, of a linear shape in the middle of the muscular abdomen or in the region of the tendo-muscular plane, 0.7-2.5mm in width, 0.5-18 mm in length, which were sporadic (not more than 3) or multiple (4 and more).

The changes were confirmed and visualized by the 3t tomograph, using analogous vascular-phase contrast and planes of scanning (T1 BI: TR - 1200, TE - 12.8; GREC: TR - 320.0, TE - 15.0; T1 BI i GRE C: FOV - 14,0x14,0 cm, Freq - 256x192; slice thickness - 2 mm; slicing - 0 mm), as well as multi-slice spinal CT with multi-slice reconstructs. The changes in thickness were more definitely differentiated along the chewing muscle fibers, which equaled 80-85 HU; the muscular tissue which didn't undergo changes had thickness of 60-65 HU.

Table 1.

Sizes of the lateral pterygoid muscle upper and lower heads in types I, II and III

Parameter	Anatomical structure type					
	Clinical groups			Control group		
	typeI	type II	type III	type I	type II	type III
Vertical size of the upper head						
Dextra	5.5±0.7	3.5±0.5	5.9±0.7	4.9±1.0	3.2±0.4	7.8±0.5
Sinistra (mm)	4.4±0.6	3.6±0.5	5.8±0.8	5.1±1.1	3.2±0.5	7.7±0.6
Vertical size of the lower head						
Dextra	16.2±1.9	16.9±0.9	15.5±1.3	16.3±1.7	18.2±2.0	16.0±2.0
Sinistra (mm)	16.2±2.0	17.2±0.9	16.4±1.1	16.5±2.1	18.0±2.0	15.0±1.9
Transverse size of the lower head						
Dextra	14.0±1.3	14.4±1.1	14.0±1.3	13.8±1.5	14.5±1.6	14.3±1.5
Sinistra (mm)	14.2±1.1	14.3±1.1	13.8±1.3	13.9±1.1	14.2±1.1	14.2±2.1

Regarding thickness of the examined regions, we could assume that in case of prolonged muscle dysfunction they may lead to irreversible fibrous degeneration, thus intensifying arthro-muscular dysfunction of the TMJ. The relation of the TMJ dysfunction in patients with morphological changes of the lateral pterygoid muscle are represented in table 2.

Table 2

Matching of the TMJ dysfunction clinical and MR-manifestations in case of modified morphostructure of the lateral pterygoid muscle

Clinical and MR-signs of the TMJ dysfunction	Matching to clinical manifestations					
	Type 1		Type II		Type III	
	n	%	n	%	n	%
Painful sensations during palpation	44	44.9	6	6.1	4	4.1
Limited mouth opening	38	38.8	6	6.1	4	4.1
TMJ clicking	61	62.2	12	12.2	6	6.1
Mandibular deviation	37	37.8	10	10.2	6	6.1
Articular disc dislocation	66	67.3	11	11.2	6	6.1

The basic group patients has reliable difference in vertical size of the lateral pterygoid muscle upper heads, according to the structure type: (type I: 5 [4; 5]; type II 3 [3; 4]; type III 7 [6 ; 8], $p < 0.001$), the same pattern was revealed with the control group patients. There wasn't detected any significant difference in size of medial pterygoid and chewing muscles. The patients of the main and control groups had significant difference in: number of linear thickening in the lateral pterygoid muscles (8 [6; 10] i 2 [1; 4], $p < 0.001$), medial pterygoid muscles (4 [2; 6] i 3 [1; 4], $p < 0.05$) and chewing muscles (1 [1; 2] i 0 [0; 2], $p < 0.05$). As for the other lateral pterygoid muscles characteristics, the significant difference was detected in the thickening length (1.13 ± 0.28 i 0.81 ± 0.18. $p < 0.001$); their width (the basic group with prevailing muscle thickening over

1mm, p <0.05) and localization (the region of muscle attachment over its middle third part – prevailing localization of thickening in the basic group, tendo-muscular plane – in control group, $\chi 2 = 40.12$. p <0.001). A significant correlation was detected between the disease duration and thickened pterygoid muscles number ($r = 0.47$; $p < 0.001$) as well as in the chewing muscles ($r = 0.23$; $p < 0.05$). The author detected conjugation between the lateral pterygoid thickness width and dysfunction clinical index ($\chi 2 = 5.21$; $p < 0.05$). The received data aided in evaluating the clinical pattern, planning or correcting the necessary treatment plan, which increased efficiency of the TMJ dysfunctions therapy.

Conclusions

Due to the magnetic resonance tomography results, the author analyzed and described the lateral pterygoid muscles according to their anatomy. Morphometric study and comparative analysis of chewing muscle characteristics in healthy patients and those with clinical dysfunctions were conducted. The study showed significant difference in size of the lateral pterygoid muscle upper heads regarding their anatomical type. Insignificant difference was revealed in size of the lateral pterygoid muscles in patients of the basic and control groups. The MRI aided in visualization of chewing muscles with defining localization, number, size and intensity of the morphological modifications which reflect affection of the muscles by pathological process. All basic group patients had morphological modifications of the pterygoid and chewing muscles shown as hypointensive at T1 BI and GRE C linear regions, of various expression degree, depending on the expression and duration of the dysfunction. So, the clinical symptoms in patients with muscular-articular dysfunction of the TMJ is predominantly stipulated for the functional and morphological modifications of the chewing muscles, which should be considered while planning the treatment and making prognosis.

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ABOUT THE INFLUENCE OF CONNECTIVE TISSUE DYSPLASIA ON CONTENT OF CERTAIN HORMONES IN CHILDREN WITH FUNCTIONAL DYSPEPSIA

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К ВОПРОСУ О ВЛИЯНИИ ДИСПЛАЗИИ СОЕДИНИТЕЛЬНОЙ ТКАНИ НА СОДЕРЖАНИЕ НЕКОТОРЫХ ГОРМОНОВ У ДЕТЕЙ С ФУНКЦИОНАЛЬНОЙ ДИСПЕПСИЕЙ

134 children with functional dyspepsia (FD) at the age from 5 to 15 years were examined. The presence of connective tissue dysplasia stigmata was revealed in the phenotype of 88,0 % of children with FD, 6 or more stigmas were observed in 31,3 % of patients, most often in ulcer-like dyspepsia. The average number of stigmas in a child with FD was 5.0 ± 0.3. In children with FD hyperinsulinemia was observed, the most significant in ulcer-like and dysmotility-like dyspepsia. The level of cortisol in the blood serum in children with FD was within the lower limit of normal, while hypercortisolemia was typical for patients with ulcer-like dyspepsia. In children with multiple stigmas of connective tissue dysplasia a low content of insulin and cortisol in the blood serum was