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THE INCIDENCE OF OSTEOCHONDROSIS IN COMBINATION WITH MALOCCLUSION AMONG STUDENTS OF THE MEDICAL UNIVERSITY

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ABSTRACT

Relevance. The prevalence of posture defects, according to various researchers, is from 0.6% to 78%. The disruptions in the posture biomechanics leads to excessive stress on the main joints of the human body including temporomandibular joint.

Objective. The research aimed to study the prevalence of violations of the anatomical and functional system "posture-occlusion" and the structure of early signs of degenerative-dystrophic changes in the spine in medical students.

Materials and methods. 130 students of medicals and dental faculties (including 42 men and 88 women) with posture disorders were examined in accordance with special questionnaires developed at the department. The assessment of the functional state of the spinal was carried out using motor tests by the method of Goryana G.A. and complaints of pain according to the 10-point numerical scale of pain "NSP". The malocclusion was assessed according to the method of Khvatov depending on the type of mandibular displacement. Statistical analyses with program IBM SPSS Statistic Base v.22.

Results. It has been found that 78 students or 60% did not have restricted and widespread osteochondrosis and pain degree was lower than 5 points. A high prevalence (40%) of combined deformity of posture and displacement of the lower jaw in combination with pain syndrome was established. Along with restricted osteochondrosis 38 (73,08%), distal type of lower jaw displacement was more commonly seen amongst students with postural defects 35 (67,31%). These clinically manifested a pain level of more than 5 points. Signs and symptoms of a combined pathology posture-occlusion were more common among women (37 patients, or 71.15%) than men (15 patients, or 28.85%).

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Introduction. The prevalence of posture defects (kyphosis, scoliosis, lordosis, stoop, etc.), osteochondrosis of the spine, myofascial pain syndrome, scapula-humeral periarthritis, tension headache, as well as hernias of the lumbar and cervical discs with radiculopathy, according to various researchers, is from 0.6% to 78% (4-6). Such a discrepancy in manifestations is explained by the varying degree and nature of pain, contractures of the mucous membranes and the involvement of a neurological component in the pathological process, and the presence of MRT diagnostics (1-12).

The muscles of the lower jaw are an integral part of the postural myofascial chains. The neurophysiological links between the masticatory system and the cervical spine explain the radiating and referred pain types. The disruptions in the posture biomechanics leads to excessive stress on the

main joints of the human body with the initial impacts on the body skeleton, more specifically: on the vertebrae and the curvature of the spine. Such impacts should manifest itself in the form of chronic pain symptoms with periodic exacerbations episodes in certain anatomical areas. Therefore, it is important to study the mandibular position alongside the clinical assessment of the spine.

Purpose of the study. To study the prevalence of violations of the anatomical and functional system "posture-occlusion" and the structure of early signs of degenerative-dystrophic changes in the spine in medical students.

Materials and methods of research. To achieve this goal, 130 students of medicals and dental faculties (including 42 men and 88 women) with posture disorders were examined in accordance with special questionnaires developed at the department. The assessment of the functional state of the spinal was carried out using motor tests by the method of Goryana G.A. (13) with the diagnosis of limited mobility in various parts of the spine and complaints of pain according to the 10-point numerical scale of pain "NSP". The malocclusion was assessed according to the method of Khvatov (14, 19), depending on the type of mandibular displacement: type I-st with lateral displacement, type II-nd with a distal displacement and III-d type with the mesial displacement of the mandible (14-22).

Results and Discussion. An analysis of gender indicators showed that 78 (60%) healthy (52 women and 26 men) (66.67% and 33.33%, respectively) (Table 1). The posture defects were diagnosed in 52 (40%) students, of which 37 women (71.15%) and in 15 men (28.85%).

The restricted osteochondrosis was observed in 38 (73.08%) students who had a violation of posture according to the type of round back (stoop), incl. in 28 women out of the total number of students with posture disorders (53.85%), and in 10 men (19.23%).

The widespread osteochondrosis was observed in 14 examined students, incl. 9 women (17.30%) and 5 men (9.62%)

The displacement of the lower jaw was diagnosed in 55 students, out of 14 (26.92%) students with osteochondrosis of students (9 women and 5 men) were observed according to type I-st. Type II-nd of the displacement was observed in 35 (67.31%) patients (23 women and 12 men). Also, 3 women and 1 man did not have the posture disorders according to type II-nd. The mesial type of low jaw displacement was found in 3 students (5.77%).

All Students with the posture disorders and lower jaw displacement complained of back pain from 5 to 10 points.

Table 1. General indicators of the prevalence of postural pathology and malocclusion among medical students (%)

Students n=130	Restricted osteochondrosis	Widespread osteochondrosis	Types of mandible displacement			Pain degree on a 10-point scale.
			I-st lateral type of displacement	II-nd distal type of displacement	III-d mesial type of Displacement	
Healthy students n=78 (60%)	-	-	-	-	-	-
Women n=52-66.67%	-	-	-	3 (3.85%)	-	-
Men n=26-33.33%	-	-	-	1 (1.28%)	-	-
Students with the posture defects n=52-40%	38 (73.08%)	14 (26.92)	14 (26.92%)	35 (67.31%)	3 (5.77%)	+
Men n=15-28.85%	28 (53.85%)	9 (17.30%)	9	23	2	+
Women n=37-71.15%	10 (19.23%)	5 (9.62%)	5	12	1	+

Conclusions.

1. The study was conducted on 130 students. It has been found that 78 students or 60% did not have restricted and widespread osteochondrosis and pain degree was lower than 5 points. The study also showed that out of the 78 students, 3 students, or 3.85%, had distal type of lower jaw displacement.

2. A high prevalence (40%) of combined deformity of posture and displacement of the lower jaw in combination with pain syndrome was established.

3. Along with restricted osteochondrosis 38 (73,08%), distal type of lower jaw displacement was more commonly seen amongst students with postural defects 35 (67,31%). These clinically manifested a pain level of more than 5 points.

4. Signs and symptoms of a combined pathology posture-occlusion were more common among women (37 patients, or 71.15%) than men (15 patients, or 28.85%).

5. The prevention of complications of osteochondrosis of the spine should be started as early as possible, taking into account the morphological and functional changes, as well as the degree of pain syndrome with the diagnosis of posture defects.

REFERENCES

1. Alyas F, Connell D, Saifuddin A. Upright positional MRI of the lumbar spine. *Clin Radiol*. Sep 2008; 63(9):1035-1048.
2. Andersson GBJ, Brown MO, Dvorak J, et al. Consensus summary on the diagnosis and treatment of lumbar disc herniation. *Spine*. 1996;21(24 SUPPL.):75S-78S.
3. Atlas SJ, Tosteson TD, Hanscom B, et al. What is different about workers' compensation patients? Socioeconomic predictors of baseline disability status among patients with lumbar radiculopathy. *Spine (Phila Pa 1976)*. Aug 15 2007;32(18):2019-2026.
4. Bakhtiary A, Safavi-Farokhi Z, Rezasoltani A. Lumbar stabilizing exercises improve activities of daily living in patients with lumbar disc herniation. *J Back Musculoskeletal Rehabil*. 2005 2005; 18:55-60.
5. Balague F, Nordin M, Sheikhsadeh A, et al. Recovery of impaired muscle function in severe sciatica. *Eur Spine J*. Jun 2001;10(3):242-249.
6. Beattie P. The relationship between symptoms and abnormal magnetic resonance images of lumbar intervertebral disks. *Phys Ther*. 1996;76(6):601-608.
7. Beattie PF, Meyers SP. Magnetic resonance imaging in low back pain: General principles and clinical issues. *Phys Ther*. Jul 1998;78(7):738-753.
8. Corkery M. The use of lumbar harness traction to treat a patient with lumbar radicular pain: A case report. *J Man Manip Ther*. 2001;9(4):191-197.
9. Cribb GL, Jaffray DC, Cassar-Pullicino VN. Observations on the natural history of massive lumbar disc herniation. *J Bone Joint Surg Br*. Jun 2007;89(6):782-784.
10. De Luigi AJ, Fitzpatrick KF. Physical Examination in Radiculopathy. *Phys Med Rehabil Clin N Am*. Feb 2011. 22(1):7-40.
11. Delauche-Cavallier MC, Budet C, Laredo JD, et al. Lumbar disc herniation. Computed tomography scan changes after conservative treatment of nerve root compression. *Spine (Phila Pa 1976)*. Aug 1992;17(8):927-933.
12. Deyo RA, Haselkorn J, Hoffman R, Kent DL. Designing studies of diagnostic tests for low back pain or radiculopathy. *Spine*. 1994;19(18 SUPPL.):2057S-2065S.
13. Горячая Г.А. Избавьтесь от остеохондроза. Київ. К.: Лыбидь, 1991. 80 с. ISBN 5-11-001775-1.
14. Хватова В.А., Абакаров С.И., Басов А.В., Абакарова Д.С., Аджиев К.С. Дисфункции и заболевания височно-нижнечелюстного сустава: учебное пособие / В.А. Хватова, С.И. Абакаров, А.В. Басов, Д.С. Абакарова, К.С.Аджиев; ГБОУ ДПО РМАПО, 2013. – 51 с. ISBN 978-5-7249- 2102-2.
15. Цимбалистов А.В., Лопушанская Т.А., Червоток А.Е. с соавт. Комплексный подход к лечению больных с дисфункцией височно-челюстных суставов. В сб. Клиническая постурология, поза и прикус. – СПб, - 2004, - с.26-29
16. Черкес-Заде Д.Д. Остеопатическая диагностика и лечение заболеваний позвоночника. 3-е изд., М.:2003. – 120с.
17. Чеченин А.Г. Нейрогенные функциональные биомеханические нарушения двигательной системы при остеохондрозе позвоночника. // Автореф. канд. дисс. – Москва, - 2000, - 48с.
18. Gagey P.M. Фундаментальные аспекты в постурологии. В сб. Клиническая постурология, поза и прикус. СПб., - 2004. – с.9-15.
19. Хватова В.А. Клиническая гнатология. М.: Медицина, - 2005. -295с. 19. Хватова В.А. Функциональная диагностика и лечение в стоматологии. – М. – 2007. – «Медицинская книга», из-во «Стоматология», - 293с.
20. Трезубов В.Н. Булычева Е.А., Быстрова В.В., Горбачёв В.В. Роль биологической адаптивной связи в комплексном патогенетическом лечении заболеваний височно-нижнечелюстного сустава и жевательных мышц. Институт стоматологии. – Санкт-Петербург. – 2003. №3 – с.33-35.
21. Бугровецкая О.Г., Юров В.В. Мануальная диагностика и мануальная терапия при дисфункции височно-нижнечелюстного сустава. //Рефлексотерапия. – 2003. - №3 – с.13-15.
22. Гнатология и функциональная диагностика височно-нижнечелюстного сустава: учеб. пособие / Сост. П.Т. Жолуева, Т.Т. Сельпиев, Р.С. Алымбаев, А.Ж. Мурзалиев, Ж.Д. Ашымов. Бишкек: КРСУ, 2014. 182 с.
23. Корнеева, А. С., Токаревич И. В., Корхова Н. В., Сакадынец А. О. Распространенность и структура зубочелюстных аномалий у детей 5–12 лет г. Минска и Минской области // Инновации в стоматологии. Материалы VI съезда стоматологов Беларуси. – Минск, 2012. – С. 109–111.
24. Ю. В. Зенькевич, Т. Н. Терехова “Частота встречаемости зубочелюстных аномалий у лиц молодого возраста в связи с прорезыванием третьих моляров” «Белорусский государственный медицинский университет» 2015.