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Rehabilitation and Social Integration Commission
with cooperation of Rehasport Clinic Foundation – Poznan

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DEAR READERS,

Issues of Rehabilitation, Orthopaedics, Neurophysiology and Sport Promotion – IRONS (formerly Issues of Rehabilitation Promotion) publishes the original papers, reviews, research reports and case reports from the fields of rehabilitation, physiotherapy, orthopaedics and neurophysiology as well as topics dealing with diagnostic and treatment of the sport related traumas. IRONS edits the scientific papers based on methods used in many medicine branches. IRONS is printed quarterly in Polish and English languages, both in printed journal and electronic versions. IRONS is dedicated to both advanced and experienced as well as young scientists.

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CONTENT

DEAR COLLEAGUES,

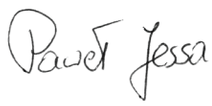
We are pleased to present the supplement 5 of Issues of Rehabilitation, Orthopaedics, Neurophysiology and Sport Promotion – IRONS. It has been partially devoted to topics of lectures presented during Second Students International Conference „Frontiers in Neurology, Neurophysiology and Neuropharmacology" on 12–13th of May 2017 under the honorary patronage of Rector of Poznan University of Medical Sciences. The supplement includes abstracts of lectures.

We appreciate the authors' effort in preparing this content. We would like to give special thanks to IRONS Scientific Secretary – Agnieszka Wincek for contribution in preparation of the materials for printing in perfect form and schedule.

We are sure that content of the supplement will be great addition to presented lectures, good source of recent knowledge and remarkable remain of this extraordinary meeting.

Moreover some tips for IRONS Reviewers aiming to explain the complicated way of review process accepted in Journal are included as the Letter from Editor.

Paweł Jessa
Students Chairman of Conference



Prof. Juliusz Huber
Scientific Committee Chairman of Conference

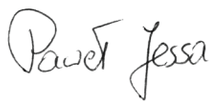
SZANOWNI PAŃSTWO,
Z wielką przyjemnością przedstawiamy suplement 5 kwartalnika Issues of Rehabilitation, Orthopaedics, Neurophysiology and Sport Promotion – IRONS. Został on częściowo poświęcony zagadnieniom prezentowanym podczas wykładów na Drugiej Międzynarodowej Konferencji Studenckiej „Współczesne kierunki badań w neurologii, neurofizjologii i neurofarmakologii", która miała miejsce w dniach 12–13 maja 2017 roku, pod honorowym patronatem Rektora Uniwersytetu Medycznego w Poznaniu. Suplement zawiera streszczenia prelekcji.

Doceniamy wysiłek autorów w przygotowanie treści artykułów i streszczeń. Szczególne podziękowania składamy Sekretarzowi Naukowemu IRONS – Agnieszce Wincek za przygotowanie wszystkich materiałów w odpowiedniej do druku formie.

Z całą pewności treść suplementu będzie cennym uzupełnieniem wygłoszonych podczas konferencji wykładów, źródłem aktualnej wiedzy na poruszane tematy i pamiątką z tego wyjątkowego spotkania.

Co więcej, w suplemencie przedstawiono niektóre wytyczne wchodzące w skład skomplikowanego procesu recenzenckiego akceptowanego przez IRONS jako List od Wydawcy.

Paweł Jessa
Przewodniczący Konferencji
z ramienia Studentów



Prof. Juliusz Huber
Przewodniczący Konferencji
z ramienia Komitetu Naukowego

DIAGNOSIS AND TREATMENT OF THE DIABETIC POLYNEUROPATHY IN 2017

Aleksandra Araszkiewicz
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Diabetic neuropathy is a heterogeneous group of conditions that affects different parts of the nervous system and presents with diverse clinical manifestations. The lecture covers topics of early diagnosis, algorithm for the management of pain, consequences of diabetic neuropathy and finally new concept of neuropathy of the central nervous system.

SPEECH IS SILVER, SILENCE IS GOLDEN. WHY SPEECH ARREST BY TRANSCRANIAL MAGNETIC STIMULATION MAY BE DESIRABLE?

Martyna Borowczyk
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Transcranial Magnetic Stimulation and its variant repetitive TMS (rTMS) became innovative and effective methods of cortical stimulation and investigation of the language workings in the brain. rTMS can be applied as a stimulus for blocking the capacity to speak aloud inducing speech arrest. Thanks to its many advantages, it has been used as a research, diagnostic and therapeutic tool. The brain plasticity can be increased by rTMS by speech arrest in over-active hemisphere of patients suffering from nonfluent aphasia. TMS treatment effects and applications in various fields will be discussed.

EYE PAIN AND SECONDARY HEADACHE IN THE COURSE OF *DEMODEX* SPP. INFECTIONS

Izabela Chudzicka-Strugała[1], Barbara Zwoździak[1], Walenty Chudzicki[2]
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Demodex spp. (*D.folliculorum, D.brevis*), an external parasite, plays role as an important etiological agent of blepharitis or *blepharoconjunctivitis*, also causing chalazions or acne rosacea. The aim of the research was the demonstration of the eye and head pain incidence in the course of *Demodex* spp. infection. The investigated group included 320 patients at the age of 25-82, with blepharitis or blepharoconjunctivits and eye pain, swelling of the eyelids and headache. In 290 cases (90%) *Demodex* spp. occurrence was demonstrated. In 30 (9%) patients: 14 (47%) women and 16 (53%) men bacterial (*S. aureus* or *S. epidermidis*) co-infection was detected. Patients with chronic blepharitis or blepharoconjunctivitis and eye pain should extend neurological and ophthalmic examinations performing parasitological and bacteriological analysis.

FACTORS LIMITING GOOD RESULTS OF SURGICAL AND CONSERVATIVE TREATMENT IN PATIENTS AFTER SPINAL CORD INJURIES – CLINICAL NEUROPHYSIOLOGY OBSERVATIONS

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Factors limiting good results of treatment in patients with both complete and incomplete spinal cord injuries can be defined as primary structural factors and secondary functional consequences. The aim of the lecture is presentation of clinical and neurophysiological results performed before and after treatment of patients with spinal cord injuries when surgeries and conservative methods were applied and factors limiting their good results were detected.

PRINCIPLES OF SCOLIOSIS SURGERY AND NEUROPHYSIOLOGICAL MONITORING

Tomasz Kotwicki[1], Juliusz Huber[2]
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Scoliosis surgery consists of spine exposure followed by placement of multiple implants attached to vertebrae. Corrective maneuvers comprise distraction, compression, translation or derotation and can modify the shape and size of the vertebral canal exposing the neural tissue to damage. Intraoperative neuromonitoring allows for avoiding this severe complication and comprises motor evoked potential and somatosensory evoked potentials. The integrity of both afferent and efferent paths is supervised by a neurophysiologist who is present during surgery.

THE GLOBAL EPIDEMIC OF VITAMIN D DEFICIENCY – A MULTIDISCIPLINARY CHALLENGE FOR DEVELOPED AND DEVELOPING COUNTRIES

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Vitamin D (1α, 25-dihydroksycholekalciferol) serves as an prohormone with multidirectional impact on human health. It has been shown that it regulates at least 1000 genes in the different types of tissues throughout the body. Foods cannot offer adequate amounts of vitamin D to ensure a proper blood level of his vitamin. Our two choices are the sun's rays or vitamin D3 supplements. The risk of toxicity when vitamin D supplements are used is very low.

NEUROPHYSIOLOGICAL EVALUATION OF BRACHIAL PLEXUS INNERVATION AND INJURY

Agnieszka Wiertel-Krawczuk
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Presentation of principles of neurophysiological studies applied to evaluation of brachial plexus (BP) afferent and efferent neural transmission in cases of its injuries in different branches. Standards of clinical neurophysiology in diagnostic of BP injury usually include

electroneurography, electromyography and somatosensory ekoked potentials examinations. Motor evoked potentials induced with magnetic field provide additional insight in verification of direct motor transmission from centres at cervical level to upper extremity muscles aiming differentiation of probably conduction block in BP branches from pathology located at cervical root level.

PHONIATRIC, NEUROPHYSIOLOGICAL AND PROTHODODONTIC EVALUATION OF FACTORS INFLUENCING LIMITATION OF VOICE EMMISION IN TEACHERS WITH 20-YEARS OCCUPATIONAL PRACTICE

Bożena Wiskirska-Woźnica[1], Ilona Kamińska[1], Juliusz Huber[2], Anna Sójka[3], Magdalena Kałos[1], Hanna Czerniejewska-Wolska[1], Agnieszka Wincek[2], Agnieszka Szymankiewicz-Szukała[2], Bogna Małaczyńska[1]

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The aim of this study was to find out the relationship between existence of temporomandibular disorders (TMD) symptoms and clinically detected voice emission abnormalities in teachers with 20-years occupational practice.

Clinical relevance of this study may include introducing the relaxation procedures towards masseter, supra- and infrahyoid muscles additionally to the conservative phoniatric treatment to improve the voice emission in teachers.

DIAGNOSIS AND TREATMENT OF THE DIABETIC POLYNEUROPATHY IN 2017

Aleksandra Araszkiewicz
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Introduction and general aim

Diabetic neuropathy is one of the most common complications of diabetes. This heterogeneous group of conditions affects different parts of the nervous system and presents with diverse clinical manifestations.

Results

Among the various forms of diabetic neuropathy, distal symmetric polyneuropathy (DSPN) and diabetic autonomic neuropathies, particularly cardiovascular autonomic neuropathy (CAN), are by far the most studied. In its course both small and large nerve fibers are damaged. Small fiber neuropathy (SFN) might occur early in diabetes and often is not revealed in physical examination as well as in electrophysiological studies. Up to 50% of diabetic peripheral neuropathies may be asymptomatic. If not prevented and recognized, patients are at risk for diabetic foot syndrome. Due to a lack of treatments that target the underlying nerve damage, prevention is the key component of diabetes care. Screening for symptoms and signs of diabetic neuropathy is also critical in clinical practice, as it may detect the earliest stages of neuropathy, enabling early intervention. Therefore, new accurate and noninvasive methods are needed for its early diagnosis. Skin biopsy with the assessment of intraepidermal nerve fiber density (IENFD) has been approved as a reliable technique and gold standard to confirm clinical diagnosis of SFN.

Conclusions

The lecture covers topics of early diagnosis, algorithm for management of pain because of DSPN, consequences of diabetic neuropathy and finally new concept of neuropathy of the central nervous system.

Keywords: diabetic polyneuropathy, diagnosis

SPEECH IS SILVER, SILENCE IS GOLDEN. WHY SPEECH ARREST BY TRANSCRANIAL MAGNETIC STIMULATION MAY BE DESIRABLE?

Martyna Borowczyk
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Introduction and general aim

Transcranial Magnetic Stimulation, presented first in 1985 by Baker et al., operates on Faraday's principle of electromagnetic induction: rapidly changing magnetic field produced in the coil externally to the skull penetrates into the cerebral cortex and causes an electrical current to flow in neurons. This process disrupts normal neural activity in a specific brain area for a few tens of milliseconds and through either excitation or inhibition of the neurons in the brain TMS is capable of regionally blocking or facilitating cortical processes. Transcranial Magnetic Stimulation and its variant repetitive TMS (rTMS), which

uses a series of impulses delivered at a specific frequency, became innovative and effective methods of cortical stimulation and investigation of the language workings in the brain.

Results

rTMS can be applied as a stimulus for blocking the capacity to speak aloud inducing speech arrest. Thanks to its many advantages, it has been used as a research, diagnostic and therapeutic tool. Also a link between handedness and speech can be studied by rTMS. New algorithm of the study has been proposed.

Conclusions

Rationale to aphasia treatment by rTMS has been set. Functional imaging studies of language in patients with nonfluent aphasia frequently reveal an increased activation of a hemisphere opposed to damage by stroke. Such "over-activation" can lead only to partial, or incomplete recovery. The brain plasticity can be increased by rTMS by speech arrest in over-active hemisphere. Treatment effects and TMS applications in various fields will be discussed.

Keywords: transcranial magnetic stimulation, application

CHLAMYDIA TRACHOMATIS INFECTIONS IN POLISH WOMEN

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Introduction

Chlamydia trachomatis is one of the most common etiological agents of sexually transmitted bacterial infections (STI). The symptoms associated with *C.trachomatis* genital infection may include vaginal discharge, dysuria, postcoital bleeding, intermenstrual bleeding and abdominal pain, but most frequently course of the infection is asymptomatic. Chronic and relapsing infections with *C.trachomatis* may result in serious sequelae, including pelvic inflammatory disease resulting in infertility, ectopic pregnancy and chronic pelvic pain.

Objective

The aim of the study was to assess occurrence of *C.trachomatis* infections in adult women with confirmed fertility and infertile patients.

Material and methods

The study was conducted between 2014–2017 on 280 women divided into two groups. Group 1 included 160 patients (57.15%), examined before planned pregnancy. Group 2 – 120 (42.85%) women with confirmed infertility. A biological material consisted of cervical canal smear/scrapings. *C.trachomatis* DNA was isolated (Swab Kit, A&A Biotechnology) and detected by nested-PCR (Blirt).

Results

C.trachomatis DNA was detected in 12 (7.5%) cases of group 1 (control before pregnancy) and in 24 (20%) infertile patients (group 2). The obtained results were significantly different ($p=0.0237$) between the investigated groups.

Conclusions

1. The incidence of asymptomatic *C. trachomatis* infections in women is low (7.5%), while in infertile woman patients occurs significantly more (20%), that may be one of the important factors in the ability of a woman to become pregnant.
2. In women with diagnosed infertility, *C.trachomatis* DNA detection should be performed.
3. The *C.trachomatis* infection examinations should be an obligatory test before planned pregnancy.

Keywords: Chlamydia trachomatis, infections, women, incidence

EYE PAIN AND SECONDARY HEADACHE IN THE COURSE OF *DEMODEX* SPP. INFECTIONS

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Introduction

Demodex spp. is an external parasite, found in hair follicles and skin sebaceous glands. *Demodex folliculorum and Demodex brevis* are two main species pathogenic for humans. Dermatitis most often involves nose region, around eyes, forehead and chin, but also other parts of the human body e.g. hands and foot skin. *Demodex* spp. is an important etiological agent of blepharitis or *blepharoconjunctivitis*, also causing chalazions or acne rosacea. Infection incidence increases with age.

Objective

Demonstration of the eye and head pain incidence in the course of *Demodex* spp. infection.

Material and methods

The investigated group included 320 patients at the age of 25–82 (180 women, 140 men) with blepharitis or blepharoconjunctivits and eye pain, swelling of the eyelids and headache. To all patients neurological and ophthalmic long-term treatment was applied, without positive results.

The diagnostics consists of parasitological and microbiological examinations of the biological material. Four eyelashes from each eyelid were epilated and swabs from conjunctiva for bacteriological culture were taken. The direct wet slide of eyelashes in drop of 10% KOH was prepared. An optical microscope (with 100x magnification) for detection of *Demodex spp.* (eggs, nymphs, larvae and mature forms) was used. Routine microbiological diagnostics was applied.

Results

In 290 cases (90%) (160 (88,9%) women and 130 (93%) men) *Demodex* spp. occurrence was demonstrated. In 30 (9%) patients: 14 (47%) women and 16 (53%) men *S. aureus* or *S. epidermidis* co-infection was detected.

Conclusions

1. Patients with chronic blepharitis or blepharoconjunctivitis and eye pain should extend ophthalmic examinations performing parasitological and bacteriological analysis. 2. Eyestrain, in the course of *Demodex* spp. infection, causes secondary temporal and frontal headaches. 3. Adequate microbiological diagnostics may reduce treatment costs.

Keywords: eye pain, secondary headache, Demodex spp. infections

FACTORS LIMITING GOOD RESULTS OF SURGICAL AND CONSERVATIVE TREATMENT IN PATIENTS AFTER SPINAL CORD INJURIES – CLINICAL NEUROPHYSIOLOGY OBSERVATIONS

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Introduction and general aim

Factors limiting good results of treatment in patients with both complete and incomplete spinal cord injuries (SCI) can be defined as primary structural factors and secondary functional consequences. The aim of the lecture is presentation of clinical and neurophysiological

results performed before and after treatment of patients with SCI when surgeries and conservative methods were applied and symptoms of mentioned were detected.

Subjects and methods

Series of patients after spinal cord injury mainly at thoracic level were studied. Surface electromyography recordings from chosen upper and lower extremity muscles at rest and during maximal contraction lasting 5 seconds, electroneurography of evoked potentials in motor fibers in proximal and distal parts of nerves, sensory perception studies with von Frey's filaments and electrical perception threshold studies as well as the motor evoked potentials induced with magnetic field from motor cortex were applied twice.

Results and conclusions

Syringomyelic cave, massive gap between distal and proximal ends of injured spinal cord (more than 10 mm) scar and oedema influenced surgical results the most, respectively. Secondary, peripheral degenerative changes in fibers of nerves and lack of efferent neural transmission from supraspinal to cell bodies of motor spinal centers determined results of conservative treatment even in presence of spontaneous regeneration at level of injury. Surgical intervention providing a bridge across the injury site with nerve autografts supplemented with either Schwann cells or olfactory bulb ensheathing cells, secondary scarf removing aiming the spontaneous axonal sprouting and application of trophic agents to the lesion site brought clinically visible improvement, respectively. Electrical stimulation of motor fibers in nerves with parameters based on results of neurophysiological studies and excitation of efferent fibers from cells in supraspinal centres with repetitive transcranial magnetic stimulation significantly supported postoperative, conservative treatment. Wrongly programmed or neglected rehabilitation process influenced the most improvement of motor and sensory function recovery in patients with SCI.

Keywords: spinal injury, treatment, neurophysiological recordings

PRINCIPLES OF SCOLIOSIS SURGERY AND NEUROPHYSIOLOGICAL MONITORING

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Introduction and general aim

Scoliosis represents a developmental deformity of the human spine which appears mainly in adolescence even if it can be observed during adulthood due to degenerative spine disease. Important spinal curvatures can severely impact body morphology and/or function and for this reason they should undergo surgical correction.

Results

Scoliosis surgery consists of spine exposure followed by placement of multiple anchors (implants) attached to vertebrae. Corrective maneuvers comprise distraction, compression, translation or derotation and can modify the shape and size of the vertebral canal exposing the neural tissue to damage. Intraoperative neuromonitoring allows for avoiding this severe complication of spinal surgery and that is why it becomes standard procedure in scoliosis patient's care. Neuromonitoring comprises motor evoked potential and somatosensory evoked potentials which assure the integrity of both afferent and efferent paths. Spinal cord monitoring requires supervision by a neurophysiologist who is present during surgery.

Real time monitoring allows for neurophysiologist to alert the surgeon about any change in parameters which could signify spinal cord malfunction. Immediate analysis of possible causes of abnormal motor or sensory potentials can result in modification of surgery including implant removal, reduction of curve correction or others.

Conclusion

Safety of the patient remains the main principle of scoliosis surgery and relies in part on good collaboration between surgeon and neurophysiologist.

Keywords: scoliosis surgery, neurophysiological monitoring

THE GLOBAL EPIDEMIC OF VITAMIN D DEFICIENCY – A MULTIDISCIPLINARY CHALLENGE FOR DEVELOPED AND DEVELOPING COUNTRIES

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Introduction and general aim

Vitamin D (1α, 25-dihydroksycholekalciferol) traditionally is classified as vitamins, although now it is obvious that it serves as an prohormone with multidirectional impact on human health. It has been shown that vitamin D regulates at least 1000 genes in the different types of tissues throughout the body.

Subjects and methods

Most of people, all over the world, are in the groups at risk of vitamin D deficiency. Foods cannot and do not offer adequate amounts of vitamin D to ensure a proper blood level of vitamin D. Our two choices are the sun's rays or vitamin D3 supplements. By using our heads the sun can safely increase blood levels of vitamin D without increasing the risk for skin cancer. The risk of toxicity when vitamin D supplements are used is very low.

Results and conclusions

The recommended dose for supplementation varies between the countries. The optimal for human health plasma vitamin D concentration has not been established until today and needs further researches; however the newest data suggest that it should be higher than 40 ng/ml.

Keywords: D vitamin, insufficiency, supplementation, treatment

NEUROPHYSIOLOGICAL EVALUATION OF BRACHIAL PLEXUS INNERVATION AND INJURY

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Introduction and general aim

Magnetic resonance imaging and ultrasonography as the structural examinations do not provide data on the continuity of neural impulses transmission especially in cases of complicated lesions in brachial plexus (BP) with probably multiply locations of injuries. Clinical neurophysiology studies allow for the precise evaluation of compound neural structure function in BP. Compilation of the clinical and neuroimagine studies as well as the neurophysiological examinations provide valuable and objective information about localization of injury and functional state of BP. The aim of the lecture is to present principles of neurophysiological studies applied to evaluation of brachial plexus afferent and efferent neural transmission.

Subject and methods

Patients with presumed injuries of BP structures at various locations. Presented methods are needle electromyography (EMG) recordings from muscles in proximal and distal parts of upper extremity at rest and during voluntary contraction, electroneurography (ENG) of motor (CMAP – compound motor action potential, F waves) and sensory (SCV – sensory conduction velocity) fibers in branches of BP which constitute the standard neurophysiological diagnostic tests. Additionally, there can be applied motor evoked potentials (MEP) induced with magnetic field oververtebrally (C5-C7) and at Erb's point and somatosensory evoked potential (SEP) recorded peripherally, at Erb's point, cervical and supraspinal levels following stimulation of nerves which provide precise information about functional state of BP.

Result

EMG at rest enables evaluation of muscles denervation state with differentiation on acute or chronic injury. Recording of motor unit action potentials (MUAP) with estimation of their parameters allow for exact description of muscle neurogenic lesion advancement. ENG results verify axonal or demyelinating type of injury as well as the level and range of pathology in BP fibres. Assessment of M-F wave interlatency and F-wave frequency are helpful for verifying the proper or pathological neural transmission in proximal part of the nerves (in C5-C7 ventral roots vs BP levels). Recordings of motor responses from muscles of upper extremity in proximal and distal parts following of MEPs application and SEPs recording at different levels provide data on functional integrity of efferent and afferent neural transmission respectively and confirm the presence of injury peripherally vs centrally.

Conclusions

Standards of clinical neurophysiology in diagnostic of BP injury usually include ENG, EMG and SEP examinations. MEP study provides additional insight in verification of direct motor transmission from centres at cervical level to upper extremity muscles. MEP is safe, non-invasive, painless and easy to use method aiming differentiation of probably conduction block in BP branches from pathology located at cervical root level.

Keywords: brachial plexus, neural transmission, injury, neurophysiological studies

PHONIATRIC, NEUROPHYSIOLOGICAL AND PROTHODODONTIC EVALUATION OF FACTORS INFLUENCING LIMITATION OF VOICE EMMISION IN TEACHERS WITH 20-YEARS OCCUPATIONAL PRACTICE

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Aim

The aim of this study was to find out the relationship between existence of temporomandibular disorders (TMD) symptoms and clinically detected voice emission abnormalities in teachers with 20-years occupational practice.

Subjects and methods

Twenty eight women with TMD symptoms (pain and acoustic symptoms in temporomandibular joint, mouth opening limitation, masseter muscle tenderness and trigger points existence) were examined once. Voice handicap index (VHI) and voice emission characteristics (fonation time, fundamental frequency, jitter, shimmer, noise to harmonic ratio) were determined. Surface electromyography (sEMG) recordings from supra- and infrahyoid muscles were performed in the same subjects during text reading, at rest and during maximal contraction. Videostroboscopy in all cases was performed. Normative parameters have been described in N=30 healthy women with similar anthropometric properties.

Results

Positive correlations between existence of temporomandibular disorders symptoms and poor VHI score as well as voice emission disturbances were found (r_s=0.72, r_s=0.78). Increased muscle tension of extrinsic laryngeal muscles during sEMG recordings at rest correlated negatively with motor units activity during maximal contraction (r_s=−0.75). Changes in voice emission parameters correlated positively (r_s=0.84) with abnormal sEMG recordings at rest.

Conclusions

Results of this study may confirm the hypothesis about the influence of TMD on voice emission abnormalities in occupationally active teachers. Pathological activity of extrinsic laryngeal muscles especially at rest may have been the far effect of TMD influence.

Keywords: temporomandibular disorders, voice emission abnormalities, extrinsic laryngeal muscles activity, electromyography

HOW TO REVIEW A PAPER?

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Estrada C., Kalet A., Smith W., Marshall H Chin M.H. (2006) *“How to Be an Outstanding Reviewer for the Journal of General Internal Medicine … and Other Journals”.* J Gen Intern Med 21(3), pp. 281–284.

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Raporty z badań

Manuskrypt w tej kategorii może przedstawiać wyniki badań z udziałem małej próby, przedstawienie nowych metod, należy opisać wstępne ustalenia lub badania replikacji. Manuskrypt musi mieć tą samą formę co pełnej długości manuskrypt. Raport z badań

nie powinien zaigrać mniej niż 2000 słów (z wyłączeniem strony tytułowej, streszczenia oraz piśmiennictwa) i może zawierać do 3 tabel i/lub rycin. Ilość przypisów nie powinna przekraczać 25. Ten rodzaj artykułu powinien zawierać procedury statystyczne.

Studium przypadku

Artykuł ten analizuje studium przypadku, forma jakościowych badań opisowych, który jest używany, aby przeanalizować pojedyncze przypadki, małe grupy uczestników, lub grupy, jako całości. Naukowcy zbierają dane dotyczące uczestników badania i bezpośrednich obserwacji, wywiadów, protokołów testów oraz egzaminów. Manuskrypt musi spełniać te same wymogi formatu jak pełnej długości rękopis. Studium przypadku powinno zawierać do 2700 słów (z wyłączeniem strony tytułowej, streszczenia oraz piśmiennictwa) i może zawierać do 3 tabel i/lub rycin. Liczba piśmiennictwa nie powinna przekraczać 25.

Artykuł przeglądowy

Artykuł ten powinien opisywać najnowsze postępy w dziedzinach należących do zakresu czasopisma. Artykuł przeglądowy nie może przekraczać 2700–3000 słów (z wyłączeniem strony tytułowej, streszczenia i piśmiennictwa) i zawierać nie więcej niż 10 tabel i/lub rycin. Autorzy są zachęcani do ograniczenia ilości tabel i rycin do podstawowych danych, które nie mogą być opisane w tekście. Liczba piśmiennictwa nie powinna przekraczać 60.

Wytyczne/Zalecenia

Wytyczne powinny być do 2000 słów (z wyłączeniem strona tytułowa, streszczenie oraz referencje) i może zawierać do 3 stoły i/lub cyfr. Liczba odniesień nie powinna przekraczać 25.

Podziękowanie

W ramach podziękowania proszę określić współpracowników przy artykule innych niż autorów pracy. Wyliczmy tutaj te osoby, które udzieliły pomocy podczas badań (na przykład udzielanie pomocy języka, pomoc w pisaniu lub dowód czytania tego artykułu, etc.). Należy potwierdzić również wszystkie źródła wsparcia (dotacje z agencji rządowych, prywatnych fundacji, etc.). Nazwy organizacji finansowania powinny być napisane w całości.

Piśmiennictwo

W manuskrypcie należy używać stylu cytowania piśmiennictwa „Harvard".

Porządek zamieszczania w rozdziale Piśmiennictwo nazwisk autorów, tytułu artykułów oraz nazwy czasopisma z podaniem rocznika, wolumenu i stron jest alfabetyczny. Nazwiska wszystkich autorów pojedynczej pracy są wymieniane. Autorzy prac powinni być wymienieni w tekście zgodnie z datą publikowanej pracy w porządku chronologicznym (przykład Boileau i wsp. 2009; Boileau i wsp. 2010; Butt i Charalambous 2012) w (okrągłych) nawiasach. Należy sprawdzić w liście prac w rozdziale Piśmiennictwo właściwy porządek cytowania pracy łącznie z rokiem, wolumenem, stronami od-do.

Przykład:

Elhassan, B., Bishop, A., Shin A., Spinner, R. (2010) *'Shoulder tendon transfer options for adult patients with brachial plexus injury.'* J Hand Surg Am., 35 (7), str. 1211–1219.

Artykuł z czasopisma:

Elhassan, B., Bishop, A., Shin A., Spinner, R. (2010) *'Shoulder tendon transfer options for adult patients with brachial plexus injury.*' J Hand Surg Am., 35 (7), str. 1211–1219.

Książki:

Rang, H.P., Dale, M.M., Ritter, J.M., Moore, P.K. *Pharmacology*. 5th Ed. Edinburgh: Churchill Livingstone; 2003.

Phillips, S.J., Whisnant, J.P. *Hypertension and stroke*. In: Laragh JH, Brenner BM, Editors. Hypertension: pathophysiology, diagnosis, and management. 2nd Ed. New York: Raven Press; 1995, str. 465–478.

Tabele

Tabele powinny być zamieszczone na oddzielonych arkuszach od tekstu (każda tabela na oddzielnej kartce). Powinny one być ponumerowane cyframi arabskimi. Tabele powinny zawsze być cytowane w tekście (np. Tabela 2) w kolejności numerycznej. Każda tabela powinna zawierać obowiązkowy, zwięzły tytuł wyjaśniający oraz legendę objaśniającą. Odsyłacze do tabeli powinny być wpisane poniżej tabeli. Nie należy stosować zasady pionowe. Tabele nie powinny powielać wyników prezentowanych gdzie indziej w tekście (np. na rycinach).

Ryciny

Wszystkie ilustracje, wykresy, rysunki lub fotografie są określane, jako ryciny i muszą być przesłane, jako oddzielne pliki przy składaniu rękopisu. Ryciny powinny być ponumerowane kolejno cyframi arabskimi. Powinny one być zawsze cytowane w tekście (np. rycina 3) w kolejności numerycznej. Ryciny do publikacji należy składać wyłącznie w wysokiej rozdzielczości TIFF lub EPS Format (minimum 300 dpi). Każda figura powinna być oczywista bez odwoływania się do tekstu z zwięzłą, ale jasną legendą. Wszystkie symbole i skróty stosowane na rycinie muszą być wyjaśnione, o ile nie są one powszechnymi skrótami albo zostały zdefiniowane w tekście. Opisy rycin muszą być zawarte tekście głównym po spisie literatury.

Kolory rycin

Ryciny i fotografie zostaną odtworzone w pełnym kolorze w internetowym wydaniu czasopisma. W wydaniu papierowym, wszystkie dane i fotografie zostaną odtworzone, jako czarno-białe.

Lista kontrolna

Jako część procesu składania pracy, autorzy są zobowiązani do sprawdzenia zgodności ich składu z listą kontrolną. Autorzy powinni mieć na uwadze, że nie spełnienie kryteriów z poniższej listy może skutkować odrzuceniem ich pracy.

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2. Wszyscy autorzy niniejszego opracowania przeczytali i zatwierdzili ostateczną przedstawioną wersję.
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4. Zawartość tego rękopisu nie jest obecnie brana pod uwagę do publikacji gdzie indziej.
5. Zawartość tego rękopis nie będzie objęta prawami autorskimi, składana lub publikowana w innym miejscu, a akceptacja przez czasopismo jest brana pod uwagę.
6. Nie ma rękopisu lub streszczenia bezpośrednio związanego, publikowanego lub niepublikowanego, przez autorów niniejszego opracowania.
7. Każdy autor zadeklarował swój indywidualny wkład do manuskryptu w formie elektronicznej ii przesłany do Redakcji przez autora do korespondencji.

Informacja o prawach autorskich

Składanie artykułu do publikacji zakłada przeniesienie praw autorskich od autora (ów) na Wydawcę w momencie odbioru. Zaakceptowane dokumenty stają się własnością Zeszyty Promocji Rehabilitacji, Ortopedii, Neurofizjologii i Sportu – IRONS i nie mogą być powielane w jakikolwiek sposób bez pisemnej zgody Wydawcy.

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