

NIGHT VISION DEVICES USE IN HELICOPTER AIRCREW – HUMAN FACTORS ASPECTS

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Introduction: Night Vision Devices have become an essential component of modern military aviation. It offers enhanced performance qualities compared to unaided night vision, more useful during the execution of missions at night, but at the same time their use is tributary to some limitations that should be known and accepted (both technical, and human factor related).

Material and methods: We used an anonymous questionnaire (transversal observational study) applied to helicopter pilots using different types of NVD (military flight), totaling 46 respondents. Thus we could analyze various aspects of using these devices in terms of human factors (assessment of their benefit in terms of morphoscopic acuity for different distances, stereoacuity and depth perception, visual field extent, contrast sensitivity quality, benefits in different phases of flight and in various flight conditions), and problems faced by the user: the fatigue phenomenon (description, cause, duration), spatial disorientation and „black hole illusion”, if the simulator can reproduce the situations faced by the pilot in real flight, and the importance of a basic professional course as well as continuous training.

Conclusion: The area of concerns about flight safety must include the mandatory use of DVN. Most important for quality skills are proper and continuous training.

Keywords: NVD (Night Vision Devices), human factor.

ELECTROENCEPHALOGRAPHY (EEG) METHOD UTILITY FOR EVALUATION OF PERSONALITY TRAITS IN PILOTS

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SUMMARY

Introduction: Psychological evaluation of applicants for aviation schools requires a good investigation of certain stable structural and behavioral characteristics accompanied by elimination of the environmental effects. The psychological test objectivity is an essential aspect of aeronautical selection. Beside the objectivity criteria (etalons construction, application and interpretation of the tests), a large interest consists in correlation between psychological and physiological data. Our aim is, for this phase of research, to investigate the possibility to use some electroencephalographs (EEG) indicators among psychological examination.

Method: The research includes 50 applicants who passed psychological evaluation for Air Force Academy. EEG was recorded through measures in 20 electrodes. We analyzed the spectral power of cerebral waves for 50 seconds of repose. EEG and personality data were correlated. These two sets of data were obtained during two distinct investigations.

Results: The associations between EEG spectral power and personality traits were shown by correlation analysis. Thus, alpha waves characteristics, measured in frontal and occipital areas, are associated with assertiveness and negativism; beta waves correlate with a certain degree of activism, independency, need for intellectual stimulation and risk taking; theta waves, which are presented in few cases, are linked to emotional balance.

Conclusions: Electroencephalographic measures are useful in objectifying of psychological traits. A bi-dimensional analysis, psycho-physiological, is more likely to produce a good selection of the candidates and to increase the prediction capacity of test selection toward future scholar and professional adaptations.

Key-words: EEG, personality, psycho-physiology

BILATERAL BREAST CANCER - RETROSPECTIVE STUDY 2000-2010

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SUMMARY

Bilateral breast cancer is the appearance of malignant mammary tumors in both breasts different histologic pattern., a greater degree of differentiation.

The purpose of this study is retrospective investigation of 17 cases of bilateral breast cancer operated between 2000 and 2010, the diagnosis, therapy and follow up.

Key words: bilateral breast cancer, prognosis, bilateral mastectomy, tamoxifen therapy.

VAGINAL HYSTERECTOMY FOLLOWING PREVIOUS CESAREAN DELIVERY

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SUMMARY

This presentation is based on a study developed in the Gynecology Clinic of Central Military hospital- Bucharest „Carol Davila”- there have been analyzed 50 cases of vaginal hysterectomy which followed a caesarian delivery which 10 presented also a history of a vaginal delivery, 9 patients had a history of two or more cesarean sections. We have compared the percentage of bladder injuries to the simple vaginal hysterectomies (which had no history of cesarean section).

There have been also analyzed: the operative time, the blood loss, the admission time, other complications.

Results: There haven't been found significant differences between the two groups.

Key words: cesarean section, vaginal hysterectomy, cystoraphy, vesico-vaginal dissection

INCIDENCE OF MALIGNANT TUMORS OF THE SCALP - 1993 – 2003 CLINICAL STUDY

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SUMMARY

Malignant tumors of the scalp are special forms of tumors of the head and neck region difficult to treat because of the anatomical features of the scalp itself, and the proximity to the skull and brain mass, complexity of pathological forms, together with local complications that can take different forms.

The data in this paper arise from a retrospective study that we conducted during 1993-2003 in the Department of Oral and Maxillofacial Surgery of the Central Military University Emergency Hospital. During this period 1115 skin tumors of the cephalic extremity were treated of which 257 were tumors of the scalp.

Increased polymorphism characterizes most malignant tumors located in the scalp, especially basal cell carcinomas, and makes it impossible to undertake clinical diagnosis and thus histopathology is the only way to specify the diagnosis.

Key words: malignant tumor, scalp, histological polymorphism.

ASYMPTOMATIC PULMONARY SARCOIDOSIS IN A PILOT – A CASE REPORT

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SUMMARY

Sarcoidosis is a rare chronic granulomatous disease of unknown etiology that is characterized by the presence of noncaseating, granulomatous, epithelioid tissue at the sites affected. The lungs and lymphatic system are most often affected, but sarcoidosis may affect any organ.

A 28 yrs old military helicopter pilot was diagnosed with sarcoidosis at his annual medical exam. He was asymptomatic, but chest X-ray examination revealed well-developed small nodular infiltrates, disseminated uniformly in both pulmonary fields. The final diagnosis was confirmed by pulmonary biopsy. There are only a few cases reported in specialty literature. Pulmonary sarcoidosis and its associated aeromedical concerns will be discussed.

Key words: sarcoidosis, pilot, aeromedical certification

CORRELATION BETWEEN CLINICAL MANIFESTATION AND ACUTE PHASE REACTANTS IN PATIENTS WITH ANKYLOSING SPONDYLITIS WITH BIOLOGICAL THERAPY

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SUMMARY

Our study analyzes the correlation between spinal mobility appreciated by BASMI (Bath Ankylosing Spondylitis Metrology Index) and acute phase reactants such as C reactive protein (CRP) in patients with Ankylosing Spondylitis(SAp) in treatment with TNF alfa antagonist – Infliximab(IFN). We have studied 45 patients treated with IFN (25) and Sulphasalazine(20) and our aim is to explore the relationship between CRP level and spinal mobility at patient with ankylosing spondylitis treated with biological therapy. In baseline there were no significant differences between groups in either BASMI or CRP. At final of study, at week 24, we observe a significantly greater improvements ($p < 0.0002$) in TNF group for both BASMI and CRP.

Key words: C protein reactive, BASMI, Infliximab therapy.

INTEGRIN $\beta 6$ AND LAMININ 5 ROLES IN HEALING CHRONIC ULCERS IN DIABETES

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SUMMARY

Integrin $\beta 6$ and laminin 5 (LM-5) roles in healing chronic ulcers in diabetes have been showing by performing biopsies, taken from chronic and fibrotic ulcers and normal skin obtained from patients diagnosed with diabetes. Biopsy pieces were fixed in 10% formalin and processed for inclusion in paraffin. Integrin $\beta 6$ was localized using a rabbit monoclonal antibody, anti-integrin $\beta 6$, which recognized subunits $\alpha \beta 6$ of the integrin by human origin. We, also, examined the expression of laminin 5, integrin receptor, during reepithelization. Immunostaining was performed using avidin-biotin-peroxidase complex and immunofluorescence techniques. These lesions were histologically characterized by a moderately inflamed ulcer, surrounded by a connective tissue hypercellular, fibrotic. At the level of human ulcers, skin or mucous membranes, is stimulated integrin $\beta 6$ during the early migration of keratinocytes and remain stimulated until day 14, when reepithelization is complete. As in human ulcers, integrin $\beta 6$ expression was induced by basal epithelial cells of epithelial migration at day 3, but greatly reduced after 14 days. A sample from the control group (without diabetes) indicates the type of integrin in different proportions, but without a direct influence during healing. There is a distribution of LM-5 similar to that of integrin $\alpha \beta 6$. These preliminary data of the study can support the

current hypothesis on the protective role of integrin $\alpha\beta6$ in the early stages of reepithelization and regeneration process for a diabetic ground. Laminin appears to be a noninvasive marker to measure the basement membrane metabolism.

Keywords: diabetes mellitus, integrin $\beta6$, laminin 5

CANCER CAUSING, PSYCHOACTIVE AND COGNITIVE EFFECTS OF TOBACCO CONSUMPTION

Constantin Stefani

SUMMARY

The growing risk for contracting certain diseases is directly proportionate to the period of time a person smokes but also to the quantity of tobacco smoked. Anyway, if a person quits smoking, the risks lower progressively and the diseases produced by tobacco are driven away. Within a year from smoke cessation the danger of any heart disease drop to $\frac{1}{2}$ compared to a smoker who has not given up to this vice. Smoking may jeopardize smokers' health differently. The risks vary directly proportional to the consumed tobacco quantity, growing with the frequency of smoking. Even if a person reduces smoking, his health is still in danger. Thus, smoking of light cigarette brands does not reduce this risk. Tobacco consumption leads, most of the times, to diseases which affect the heart and the lungs, enhancing the risk for cardiac arrests, of lung obstructive diseases. Lung emphysema and cancer, especially the lung cancer, laryngeal cancer, and the oral cavity cancer, the pancreatic cancer.

Keywords: squamous cells, leukoplakia, akathisia, beta-endorphin, mental illness, limbic system.

POOR AWARENESS OF SYMPTOMS OF ESOPHAGEAL AND LUNG CANCER AMONG A GROUP OF ROMANIAN PATIENTS

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SUMMARY

Introduction: Esophageal cancer and lung cancer have a less noisy onset and thus discovered late in advanced stages. Affected patients often do not give due consideration to signs and symptoms that would lead to faster diagnosis. We aimed to analyze the perception of signs and symptoms present in these malignancies in a Romanian group of patients.

Material and Method: One lot of 102 consecutive patients answered a questionnaire of 11 groups of five questions about signs and symptoms present in the esophageal and lung cancer.

Results and discussions: Some evident worrying signs and symptoms (dyspnea, hematemesis, hemoptysis, the appearance of a ganglion, chest pain) would result in immediate presentation to the doctor whereas other less noisy signs would result in late presentation or ignorance. A minority of respondents would consider cancer as a cause and would believe that surgical treatment is needed.

Conclusions: There is a poor perception of signs and symptoms that may be caused by esophageal cancer and lung cancer. Information programs are needed for faster discovery of these malignancies.

Keywords: esophageal cancer, lung cancer, signs, symptoms.

EMOTIONAL INTELLIGENCE IN MILITARY PILOTS

Florentina Pescaru, psychologist Ph.D.

SUMMARY

This paper is a part of a larger study designed to evaluate the link between emotional intelligence and decisional performance in military pilots. There are no researches on this topic for military field and those made in civilian organizations were not very systematic. For this reason, presented research is an innovative approach, offering valuable information which could be useful not only in activity of military aeronautical organization but in the other work fields.

The research hypothesis is: there are some differences regarding emotional intelligence (EI) between military pilots, depending on type of their airship.

In this direction, for the evaluation of EI, we used EI questionnaire, an adapted version of Robert Wood and Harry Tolley questionnaire.

The statistics confirmed the hypothesis: air transport military pilots (AN 26-30 and C130 Hercules) have a higher EI comparing with MIG 21 Lancer pilots.

Key words: emotional intelligence, decisional performance, military pilot, airship.