

# Chang Gung Medical Journal

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### REVIEW ARTICLES

- 113 Respiratory Function Decline and DNA Mutation in Mitochondria, Oxidative Stress and Altered Gene Expression during Aging**  
 Yau-Huei Wei, PhD; Shi-Bei Wu, MS; Yi-Shing Ma, MS; Hsin-Chen Lee, PhD  
 In this article, we discuss mitochondrial dysfunction, oxidative stress and altered gene expression during aging. Oxidative phosphorylation efficiency was decreased and mtDNA mutations and oxidatively damaged biomolecules accumulated in the somatic tissues of elderly subjects. In senescent skin fibroblasts induced by H<sub>2</sub>O<sub>2</sub>, the protein expression and activity levels of cytochrome *c* oxidase and the oxygen consumption rate were decreased. Moreover, the gene expression of pyruvate dehydrogenase was decreased but those of pyruvate dehydrogenase kinase and lactate dehydrogenase were increased. We suggest that the shift from mitochondrial respiration to glycolysis as the major supply of ATP is a biomarker of aging.
- 133 Revascularization in the Tendon Graft Following Anterior Cruciate Ligament Reconstruction of the Knee: Its Mechanisms and Regulation**  
 Harukazu Tohyama, MD, PhD; Toshikazu Yoshikawa, MD; Young-Jin Ju, MD, PhD; Kazunori Yasuda, MD, PhD  
 In anterior cruciate ligament (ACL) reconstruction, slow graft maturation may result in graft failure or elongation during the postoperative rehabilitation period. Vascular endothelial growth factor (VEGF) is a potent mediator of angiogenesis. The findings of recent studies suggest that VEGF application is a potential strategy to accelerate angiogenesis in the graft after ACL reconstruction. However, the biomechanical results indicate that exogenous VEGF application decreases the stiffness of the grafted tendon at least temporarily. Therefore, we should take into account this adverse effect of exogenous VEGF application on the mechanical characteristics of the grafted tendon.
- 140 Postmenopausal Hormone Therapy and Risk of Breast Cancer**  
 Fang-Ping Chen, MD  
 There is not sufficient evidence to prove a causal association between postmenopausal hormone therapy (HT) and breast cancer, and the degree of this association remains controversial. Although HT is the most effective method of relieving climacteric symptoms, the possible risk of breast cancer associated with long-term HT usage should not be ignored. Since the effect of HT on breast cancer risk may be related to individual susceptibility, we recommend close follow-up in those with increased breast density or any other high risk factors.

### FORUM

- 148 Molecular Mechanisms of Psychostimulant Addiction**  
 Jin-Chung Chen, PhD; Pei-Chun Chen, PhD; Yao-Chang Chiang, PhD  
 Drug addiction represents a pathological form of neuroplasticity along with the emergence of aberrant behaviors involving a cascade of neurochemical changes mainly in the brain's rewarding circuitry. Numerous studies during past decades demonstrate that the mesocorticolimbic dopamine pathway plays an essential role in the development of drug addiction. That is, dopamine D<sub>1</sub> receptor-mediated cAMP/protein kinase A as well as dopamine- and cAMP-regulated phosphoprotein of 32 kDa (DARPP-32) and transcription regulator ΔFosB up-regulation in the nucleus accumbens were associated with the development of behavioral sensitization in an animal model of drug addiction. The finding of cAMP-independent but dopamine D<sub>2</sub> receptor-mediated Akt/GSK3 activation in the nucleus accumbens of behaviorally sensitized animals implies that a signal cascade downstream of both dopamine D<sub>1</sub> and D<sub>2</sub> receptors comprises the mainstay of the addiction network.

### ORIGINAL ARTICLES

- 155 Impact of Gender, Viral Transmission and Aging in the Prevalence of Hepatitis B Surface Antigen**  
 Pei-Kwei Tsay, PhD; Dar-In Tai, MD, PhD; Yu-Ming Chen, MD; Cheng-Pin Yu, BS; Shy-Yi Wan, SN; Ya-Ju Shen, MS; Deng-Yn Lin, MD

In a consecutive series of individuals who had general check-ups and three groups of relatives of patients with hepatocellular carcinoma, we found that females were less susceptible to become HBsAg carriers in horizontal transmission. The prevalence of HBsAg declined significantly in high perinatal infection groups implying that neonatal tolerance does not endure.

**165 Reliability and Validity of the 20-Item Taiwan Version of the Borderline Personality Inventory**

Chun-Yi Lee, MD, MSc; Jung-Kwang Wen, MD; Wei-Chiang Yeh, MD, MSc; Yu Lee, MD; Mian-Yoon Chong, MD, PhD, FRCPsych

This study aims to develop and validate a short questionnaire, the BPI-T20, for screening patients with borderline personality disorder in Taiwan. It was tested in 544 psychiatric patients and healthy subjects. The results showed that it has satisfactory reliability with internal consistency, with a Cronbach's alpha coefficient of 0.92. It had high discriminatory power and validity with an area under the relative operating characteristic curve of 0.93 at a cut-off score of 11/12.

**172 Laser Photocoagulation Combined with Subtenon Injection of Triamcinolone Acetonide for Diabetic Cystoid Macular Edema**

Hsi-Kung Kuo, MD; Pei-Chang Wu, MD; Yi-Hao Chen, MD; Li-Sheng Cheng, MD

This retrospective comparative study analyzed data for 34 eyes with cystoid macular edema treated with photocoagulation alone (n = 17) or combined with subtenon injection of triamcinolone (n = 17). All patients were followed for 6 months after the procedure. In the photocoagulation only group, 7 eyes had stable vision (improved, stable or loss of < 2 lines) and 8 eyes had vision loss (loss  $\geq$  2 lines). In the photocoagulation combined with triamcinolone group, 15 eyes had stable vision and 2 eyes had vision loss. Fewer eyes had vision loss in the photocoagulation combined with triamcinolone group. (chi-square test,  $p = 0.024$ ).

**182 Ruling out Piriformis Syndrome before Diagnosing Lumbar Radiculopathy**

Chi-Chien Niu, MD; Po-Liang Lai, MD; Tsai-Sheng Fu, MD; Lih-Huei Chen, MD; Wen-Jer Chen, MD, PhD

Piriformis syndrome (PS), a rare cause of sciatica, is usually diagnosed only after excluding all other possibilities. But this principle is challenging because some patients of PS had unhappy experience of receiving unhelpful lumbar decompressive surgeries based on the positive findings of image study. According to the experience of this series, Friberg test and local injection should be performed first to rule out PS for patients with unilateral sciatica. If symptoms are relieved by local injection and further physical therapy for PS, unnecessary lumbar surgery can be avoided.

**188 Two-stage Reimplantation of Infected Hip Arthroplasties**

Wun-Schen Chen, MD; Te-Hu Fu, MD; Jun-Wen Wang, MD

Forty-seven patients (48 hips) with infected hip arthroplasty were treated with two-stage reimplantation using the protocol of aggressive surgical debridement, interim antibiotic-impregnated cement beads and combined parenteral and oral antibiotic therapy. The timing for reimplantation was determined by normalization of erythrocyte-sedimentation rate and C-reactive protein levels with no clinical signs of infection. At an average follow-up period of 5.6 years, 46 (96%) hips were free of recurrent infection according to clinical examination and laboratory test results. Good to excellent results were achieved in 35 patients (74%).

**198 The Different Clinical and Liver Pathological Characteristics between the Newborns and Infants with Choledochal Cysts**

Man-Chin Hua, MD; Hsun-Chin Chao, MD; Reyin Lien, MD; Jin-Yao Lai, MD; Ming-Wei Lai, MD; Man-Shan Kong, MD

This study was undertaken to investigate the different clinical presentations between the newborns and older infants with choledochal cysts, and their liver pathological changes. The medical records of infants with choledochal cysts from March 1991 to November 2006 were reviewed. Patients were divided into newborn and infant group according to their diagnostic age. The infant group had significantly higher pre-operative morbidity, abnormal levels of serum transaminase, gamma trans-peptide (g-GT), and grade of liver fibrosis ( $\geq$  grade 2) ( $p < 0.05$ ) than the newborn group. Both groups had favorable outcomes after surgical intervention. We suggest that surgical treatment in infants should be performed early to prevent the progression of liver fibrosis.

**204 Sonographic Findings in Esophageal Achalasia**

Seng-Kee Chuah, MD; Tsung-Hui Hu, MD, PhD; Keng-Liang Wu, MD; Wei-Chen Tai, MD;

Tai-Yi Chen, MD; Yi-Chun Chiu, MD; Ming-Luen Hu, MD; Chi-Sin Changchien, MD;  
Chuan-Mo Lee, MD

Conventional sonography was done to show the features of achalasia, malignancies and normal tissue at the gastroesophageal junction. There was a hypoechoic thick wall ( $5.1 \pm 2.3$  mm) in the achalasia group, an irregular hypoechoic thick wall ( $19.5 \pm 7.8$  mm) in the malignancy group, and a regular hypoechoic gastroesophageal wall ( $3.3 \pm 1.2$  mm) in the healthy controls. Dilated lumens of the distal esophagus were identified. Although conventional sonography is not a diagnostic tool for achalasia, it offers interesting sonographic information. It may tentatively differentiate achalasia from malignancies and assist clinicians when endoscopic ultrasound is not available.

**212 Survey of Short-term Patient Satisfaction after Surgery for Obstructive Sleep Apnea**

Han-Ren Hsiao, MD; Pa-Chun Wang, MD, MSc; Wen-Nuan Cheng, MHS; Li-Ang Lee, MD;  
Ning-Hung Chen, MD; Tuan-Jen Fang, MD; Hsueh-Yu Li, MD

A patient satisfaction survey was administered to 76 patients who received surgery for obstructive sleep apnea (OSA) to investigate the level and determinants of satisfaction. The results reveal high (93.4%) overall satisfaction after surgery for OSA in this short-term (3 months) survey. Combined nasal or tongue base surgeries can be performed with patient satisfaction comparative to that of uvulopalatopharyngoplasty alone. Increased age decreased overall satisfaction levels.

### CASE REPORTS

**220 Cerebral Venous Thrombosis as the Initial Presentation of Behcet's Disease**

Ali Ibrahim Rahil, MD; Mehdi Errayes, MD; Khaled M. Salem, MD

We report cerebral venous thrombosis as the initial presentation of Behcet's disease in a 40 year-old man who presented with a six-week history of headache, progressive loss of vision in the right eye and recurrent oral ulcers. Physical examination revealed oral ulcers and posterior synechia in the right eye with loss of light perception. Fundoscopic examination showed evidence of retinal vasculitis. Magnetic resonance imaging (MRI) and magnetic resonance venography (MRV) of the brain showed superior sagittal, left transverse, and left sigmoid sinus venous thrombosis. A diagnosis of Behcet's disease was made based on clinical criteria. Treatment with methylprednisolone, cyclophosphamide, and azathioprine as well as anticoagulation was done with significant clinical improvement.

**224 Sternocleidomastoid Muscle Flap: An Option to Seal off the Esophageal Leakage after Free Jejunal Flap Transfer – A Case Report**

Cheng-Hung Lin, MD; Chih-Hung Lin, MD; Chih-Wei Wu, MD; Chun-Ta Liao, MD

A sternocleidomastoid (SCM) muscle flap seals off anastomotic leakage after an esophageal reconstruction with a free jejunal flap. The SCM muscle flap achieves the following: functional closure of the defect, control of infection, shortened period of hospitalization, and minimal donor-site morbidity. The procedure proves to be both safe and reliable for a selected N0 patient with malignant disease of the upper aerodigestive tract.

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