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Nannaphat Atsawaphidsawat et al., J Clin Exp Pathol 2017, 7:5 (Suppl)
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Beare-Stevenson cutis gyrata syndrome with full body autopsy: A case report with vascular abnormalities

Nannaphat Atsawaphidsawat, Surachat Chaiwiriyakul, Sakkarn Sangkhamanon, Chaiwat Aphivatanasiri and Piti Ungarereevittaya
Khon Kaen University, Thailand

Introduction: Beare-Stevenson cutis gyrata Syndrome (BSS) is a seriously extremely rare genetic disorder characterized by skin abnormalities and the premature fusion of certain bones of the skull (craniosynostosis). Recently evidence was presented that BSS is caused by a mutation of the *FGFR2* gene. Here, we demonstrate the first Thai case of BSS (the 27th case in English publication) with full body autopsy.

Case Report: A full-term Thai male infant, without any evidences of congenital anomalies in his family, was found having bilateral ventriculomegaly during intrauterine period. Soon after birth, the baby developed cyanosis and immediate intubation was given. His condition became worsen, until his death in second day of life. Consent for full body autopsy was given by the family members. External examination revealed classical features of BSS including clover-leaf skull shape, cutis gyrata, prominent umbilical stump, ambiguous genitalia, but acanthosis nigricans was not detected. Internal examination revealed craniosynostosis, Arnold-Chiari malformation type II, hydrocephalus and agenesis of corpus callosum. Interestingly, microscopic study of skin at the nape of neck showed glomuvenous malformation and glomangiomyoma-like lesions that was the first perivascular tumor described in BSS. Molecular analysis of *FGFR2* gene confirmed a heterozyguous p.Tyr375Cys, which was identical to that detected in previous 14 cases.

Conclusion: BSS should be considered in patients presented with craniosynostosis and cutis gyrata. Associated vascular malformations in BSS were first described in this case. The further study of additional patients will provide more information about the clinical phenotypes.

Biography

Nannaphat Atsawaphidsawat has completed her MD from Khon Kaen University in 2016. She has then continued her specialty in Anatomical Pathology, Faculty of Medicine, Khon Kaen University, Thailand.

nnpats@gmail.com

Katanyoo Sawangsri et al., J Clin Exp Pathol 2017, 7:5 (Suppl)
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Histologic findings of tonsillectomy specimen with the necessity of microscopic evaluation in young patient

Katanyoo Sawangsri, Chaiwiriyakul S and Triumwittayanon T
Khon Kaen University, Thailand

Tonsillectomy is one of the most common procedures in the hospital. Recent studies reveal that histo-pathological findings of routine tonsillectomy in the young patient has no significant pathology findings and consume times and human resource. The need of routine microscopic examination in tonsillectomy from the young patient is questioned. The objective is to study the necessity of microscopic evaluation of tonsillectomy specimen in the young patients and pathological findings in tonsillectomy specimens. A retrospective medical record review was performed at Srinagarind Hospital. The pathological specimens of 401 patients who underwent tonsillectomy at the age under 19 years old in 2011-August 2016 were analyzed and the histo-pathological findings, macroscopic examination, indication of surgery and underlying disease were reviewed. A total of 401 patients were included. The age distribution was one to 19 years (mean 7.4 years, SD 4.4). There were 251 males (62.6) and 150 females (37.4%). Lymphoid hyperplasia was detected in all patients (100%). No unexpected malignancies were found in pediatric patients. No unexpected finding in routine tonsillectomy specimens from the young patients is identified. However, microscopic examination should be considered in clinically or macroscopically suspicious cases for malignancy.

Biography

Katanyoo Sawangsri has completed her Medical School and Postdoctoral studies from Faculty of Medicine, Khon Kaen University, Thailand. Currently she is working as Pathologist at Khon Kaen University.

carecaneus@gmail.com

Eungyeong Jang et al., J Clin Exp Pathol 2017, 7:5 (Suppl)
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Inhibition of HBV replication and HBV-related inflammatory responses by KCT-01 through suppression of cccDNA formation

Eungyeong Jang[1], Na-Rae Lee[2], Kyung-Tae Lee[2], Bum-Joon Kim[3], Jang-Hoon Lee[1] and Kyung-Soo Inn[2]
[1]Kyung Hee University, Republic of Korea
[2]Kyung Hee University, Republic of Korea
[3]Seoul National University, Republic of Korea

Chronic hepatitis B (CHB) remains incurable because hepatitis B virus (HBV) nuclear covalently closed circular DNA (cccDNA) undergoes persistent maintenance in hepatocytes. Due to the fact that no current antiviral strategies with nucleos(t)ide analogs or interferon completely eradicate cccDNA, a novel antiviral option to suppress effectively cccDNA formation is urgently required. KCT-01 is a newly developed herbal mixture consisted of *Artemisia capillaris, Sanguisorba officinalis*, and *Curcuma longa*, which each plant has been revealed to cure viral infection and hepatic inflammation in previous studies. Thus, we investigated whether KCT-01 inhibits HBV virion replication as well as HBV-related hepatic inflammation through inhibition of cccDNA levels using HepG2.2.15 cell line and HBV hydrodynamic injection mouse model. KCT-01 significantly reduced HBsAg production, virion particle excretion, and intracellular 3.5 kb pregenomic RNA (pgRNA) quantity in HepG2.2.15 cells, which antiviral effects were comparable to entecavir, a representative antiviral. In accordance with *in vitro* results, KCT-01 administration dose-dependently suppressed HBsAg production and HBV virion excretion in serum and cccDNA formation and viral DNA levels in the liver tissue were also inhibited in mouse models. Besides, HBV-related inflammation mediators, such as TNF-α, IL-6, IL-1β, and MCP, were significantly downregulated under the treatment of KCT-01, validating that it could mediate both viral replication and inflammatory responses induced by HBV pathogen. Furthermore, KCT-01 produced according to Good Manufacturing Practices(GMP) regulations showed no toxicity in a preclinical study. Consequently, this study suggests that KCT-01 may play an effective regulatory role for treating CHB through suppression of cccDNA formation, a major challenge to cure HBV infection.

Biography

Eungyeong Jang completed her MD and PhD from Kyung Hee University in Republic of Korea.

obliviona@naver.com

Zhiwen Fan, J Clin Exp Pathol 2017, 7:5 (Suppl)
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The histone methyl-transferase Suv39h2 contributes to non-alcoholic steatohepatitis in mice

Zhiwen Fan
Nanjing University, China

Uncontrolled inflammatory response highlights the central theme of Non-Alcoholic Steatohepatitis (NASH), a growing global pandemic. Hepatocytes and macrophages represent two major sources of hepatic inflammation during NASH pathogenesis contributing to excessive synthesis of pro-inflammatory mediators. The epigenetic mechanism that accounts for the activation of hepatocytes and macrophages in this process remains obscure. Here we report that compared to Wild Type (WT) littermates, mice with a deficiency in the histone H3K9 methyl-transferase Suv39h2 (KO) exhibited a less severe form of NASH induced by feeding with High-Fat high-carbohydrate Diet (HFD). Pro-NASH stimuli increased Suv39h2 expression in cell culture, in mice, and in human livers. In hepatocytes, Suv39h2 bound to the Sirt1 gene promoter and repressed Sirt1 transcription. Suv39h2 deficiency normalized Sirt1 expression allowing NF-κB/p65 to become hypo-acetylated thus dampening NF-κB-dependent transcription of pro-inflammatory mediators. In macrophages, Suv39h2-mediated repression of PPARγ transcription favored a pro-inflammatory M1 phenotype over an anti-inflammatory M2 phenotype thereby elevating hepatic inflammation. It can be concluded that Suv39h2 plays a pivotal role in the regulation of inflammatory response in hepatocytes and macrophages contributing to NASH pathogenesis.

Biography

Zhiwen Fan has completed his MD degree in Nanjing Medical University in 2016 and currently working as the Director of Molecular Pathology Laboratory at Nanjing Drum Tower Hospital. His research field is majorly in the study of liver disease related transcriptional regulation, which was mainly through Post-Translational Modification (PTM) mediated fine tuning of transcription factors. He is the author of over 13 papers in reputed journals.

fanzhiwenfff@126.com

Yeung Wai Hung et al., J Clin Exp Pathol 2017, 7:5 (Suppl)
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Three case reports of papillary thyroid carcinoma within thyroglossal duct cyst

Yeung Wai Hung, Wong Ka Fai and Leung Siu Kee
Tuen Mun Hospital, Hong Kong

Papillary carcinoma within thyroglossal cyst is rare with incidence 1% to 2% from literature. We present 3 cases of papillary thyroid carcinoma out of 75 cases (4%) of thyroglossal cyst operated in our hospital in last 13 years. All three cases are of females. They belong to age 73, 16 and 30. First case preoperatively found irregular hard mass, heterogeneity with calcification on ultrasound and solid enhancing component, invading right neck strap muscle and prominent submental lymph nodes on CT scan. Second and third case had no preoperative distinguishing features of malignancy. All were managed with Sistrunk's operation and total thyroidectomy with or without lymph node dissection. For total thyroidectomy histopathology report, first case showed different tumor morphology in thyroglossal cyst and thyroidectomy specimen, likely due to second primaries, second case showed papillary carcinoma and third case showed lymphocytic thyroiditis. Cervical lymph node metastasis was noted in pathology report in first and second case. Hypocalcemia was noted in second and third case and managed with calcium supplement. All of them underwent radioactive iodine and subsequently thyroid hormone suppression therapy. They were being followed up for 4 years in the first case and 10 years in second and third case at the time of review. There was no recurrence and 5 years survival was 100%. Thyroid carcinoma found in thyroglossal cyst is well documented. This should be discussed with patient in management of thyroglossal cyst. Prognosis is good especially with papillary thyroid carcinoma.

Biography

Yeung Wai Hung, MBBS (HK), MRCSEd, Resident Trainee, Tuen Mun Hospital.

eddyyeung89@yahoo.com.hk

Dong Young Kim, J Clin Exp Pathol 2017, 7:5 (Suppl)
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Synaptic Adhesion Like Molecule (*SALM4*) regulates angiogenic functions via VEGFR2 activation

Dong Young Kim
Yonsei University, Republic of Korea

Synaptic Adhesion Like Molecules (SALMs) is the adhesion molecules, highly enriched in nervous system, include five members (*SALM 1-5*). All SALMs promote neurite outgrowth, while *SALM4* uniquely increases the number of primary processes extending from the cell body. However, the property of *SALM4* in Endothelial Cell (EC) is still unknown. Here, we discovered that *SALM4* mRNA expression was increased during differentiation from Endothelial Progenitor Cell (EPC) to EC. Unlike other SALMs, *SALM4* was expressed specifically in EC. To find functions of *SALM4*, we performed *in vitro* assays. Wound and chemotactic migration assays showed that knock down of *SALM4* attenuates EC migration. Next, we found tube formation was decreased tube length in *SALM4* deletion EC. EC Survival was reduced in *SALM4* depletion. In mouse organs, *SALM4* shows organ specificity, it was mainly expressed brain and kidney. Consistent with this observation, EC recruitment impaired in *SALM4* KO mice injected matrigel with VEGF. Aortic sprouting reduced in *SALM4* KO mice aorta implanted matrigel. To elucidate the mechanism of *SALM4* under VEGF treatment, we analyzed VEGFR2 activation. Silencing *SALM4* in EC suppressed phosphorylation of VEGFR2. Moreover, downstream of VEGFR2 signaling was also reduced. These results suggest that *SALM4* has a potential role in regulating EC migration via activation of VEGFR2.

Biography

Dong Young Kim is currently pursuing his Doctor's course in Vascular Biology at Yonsei University, Republic of Korea. He has completed his Bachelor's degree in Biochemistry at Yonsei University. His research fields are tumor angiogenesis and identifying angiogenic functions of endothelial cell enriched genes in endothelial cells.

podnfs@gmail.com

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LDB2 expression in mouse hair follicles and its knock out provokes skin problem

Jonghyo Lim
Yonsei University, Republic of Korea

The mammalian epidermis and hair follicles are highly dynamic tissues that undergo frequent turnover and cycling. Numerous stem cells reside in epidermis and hair follicles and they interact with a stem cell niche environment. This interaction maintains epidermal and hair follicle proliferation and differentiation program. If these systems broke down, skin abnormality would be occurred like severe alopecia, hyperkeratosis and skin inflammation, etc. Here, we show that *LDB2* is important for skin epidermal homeostasis and hair follicle stem cell maintenance. *LDB2* KO mouse began to show severe alopecia phenotype about 5-week-old (P35) age. But, it recovered at 6-week-old age, but as follicle cycling goes on, severe hair shedding occurs. This alopecia phenotype may be due to the hair follicle stem cell and epidermal keratinocyte maintenance problem. Hair follicle stem cells are significantly reduced in *LDB2* KO mouse versus WT mouse. Moreover, epidermal differentiation marker is irregularly expressed in *LDB2* KO mouse. Synthetically, *LDB2* that acts as a co-transcriptional factor of various genes has a very important function in skin environment.

Biography

Jonghyo Lim is currently pursuing his graduation in Yonsei University, Republic of Korea. He has received his Bachelor's degree in Biochemistry from Yonsei University in 2013. His research focuses on vessel development in various organs in mouse and molecular mechanisms of vessel sprouting by *in vitro* cellular work.

jhyolim@naver.com

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e-Poster

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Gastro-protective potential of melatonin versus melatonin loaded niosomes on gastric ulcer healing in rats

Ebtehal Abdelkhalik Ahmed Mohammed[1], Nasser Anwar[2], Omyma Galal[1], Mahmoud El-Sabahy[1] and Mokhtar Taha[1]
[1]Assuit University, Egypt
[2]Al-Azhar University, Egypt

The present study was conducted to investigate the therapeutic effects of melatonin and melatonin-loaded niosomes on ethanol-induced gastric lesions. Morphological and biochemical changes associated with each drug were investigated. 70 apparently healthy female albino rats were randomly assigned to 4 experimental groups. The first group (induction group) included 10 rats that were given 1 ml 70% ethanol and sacrificed after 1 and 1/2 hour. The second group (melatonin-treated group) included 25 rats that were administrated with 2 mg/rat melatonin by gastric tube daily after induction of ulcer by ethanol. Five rats were sacrificed after 3, 7, 14, 21, and 28 days post-treatment. The third group (melatonin-loaded niosomes treated group) consisted of 25 rats that were given melatonin-loaded niosomes in the same dose and route as the third group. Five rats were sacrificed after 3, 7, 14, 21 and 28 days post-treatment. The fourth group is control group. Gross lesions, conventional histological examination as well as biochemical analysis were carried out for each subgroup. Melatonin-loaded niosomes showed early impressive gastro-protection and improved the micro-vascular damages as early as 7 days post-treatment while unloaded melatonin therapy exerted their effects after 14 days, respectively. Biochemically, the cases of melatonin-loaded niosomes achieved the lowest mean values of lipid peroxidation and highest mean values of total antioxidants compared to other values recorded in case of unloaded melatonin therapy and these results are in accordance with that of the histo-pathological findings.

Biography

Ebtehal Abdelkhalik Ahmed Mohammed has worked as Tutor at Department Animal Pathology and Clinical Pathology, College of Veterinary Medicine, Assiut University in Egypt and has been working as an Assistant Lecturer. He is pursuing PhD at KNU Stem Cell Institute, Kangwon National University, Republic of Korea.

ebtehalabdelkhalik@aun.edu.eg, ebtehalabdelkhalik@ymail.com