common disease was fungal infection in 8 patients, and lichen simplex chronicus, prurigo nodularis in 7 patients were followed. In addition, there were other skin disease, such as Acne vulgaris, Allergic contact dermatitis, Malignant melanoma, Seborrheic dermatitis, PMLE and so on. Department of dermatology is favorable to telemedicine that we investigated its value and possibilities by clinical experience of telemedicine between Ulleung island and Dongsan medical center in Daegu for 1 year.

Key Words: Telemedicine, Skin, Ulleung

P224

A preliminary study of mechanism of stress-induced pruritus using fMRI
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Pruritus is one of the most common symptoms in the area of dermatology. It causes severe disruption in daily life, damage to skin by scratching and excoriation, and psychiatric effects such as sleep disturbance and depression due to refractory pruritus. Recently, pruritus is reported to be closely related with psychologic stress. Itching-scratching reaction seems to be activated on the central nervous system, and the temporal course was studied using functional MRI. We evaluated the effects of sedating antihistamines which cross blood-brain barrier, and non-sedating antihistamines on chronic dermatitis (lichen simplex chronicus, prurigo nodularis, xerotic eczema, etc.) which show stress-related pruritus. 8 patients (3 lichen simplex chronicus, 3 prurigo nodularis, 2 prurigo) were enrolled. We quantitatively measured the patients’ stress using Perceived Stress Scale. We used fMRI to follow the changes of activated areas of the brain before and after the medication.

Key Words: Stress, Pruritus, fMRI

P225

The relationship between dermatopathologic features and the color of skin lesion in various rashes
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While there is a wealth of empirical experience in dermatopathology regarding the relation between the color of the clinical lesions and their corresponding pathologic findings, quantitative comparisons between these two variables are rare. This study was aimed to assess the correlation of colorimetric measurements and dermatopathologic findings in the 66 lesions from a variety of dermatologic diseases which might be called as rash and retains relatively normal skin architecture. We measured the skin color of biopsy site quantitatively as CIELAB coordinates (L*, a* and b*) using colorimetric photography techniques. Pathologic slides of the lesions were assessed semiquantitatively in likert-like scale under light microscope using 14 major dermatopathologic variables. The L* value had a negative correlation with spongiosis. The a* value was positively correlated with spongiosis, necrotic keratinocytes and vascular component. Melanophages and collagen fiber compactness had a tendency to make a value of a* low. The b* value was significantly higher in the lesions with parakeratosis. These results imply that spongiosis may induce the rash lesions more reddish and darker, and parakeratosis may be associated with a yellowish color clinically. In conclusion, this study will provide useful evidence for clinicians to determine the area for biopsy, the progress of lesions, response to the treatment and prognosis without a repetitive invasive procedure.

Key Words: Colorimetry, Dermatopathology, Dermoscope, Lesional color

P226

Prurigo nodularis: histopathologic review of 15 cases
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Prurigo nodularis (PN) is chronic dermatitis and the disease occurs mainly on the extensor surfaces of the extremities and is extremely pruritic. Histologically, PN manifests nonspecific findings similar to other chronic dermatoses. Several reports
suggested some specific histologic findings cutaneous nerve hyperplasia and/or thickening, increased number of Merkel cell, enlarged dendritic mast cells and centrally located hair follicles. We conducted prospective analysis of 15 cases of PN to review common histologic features and validate the significance of previously suggested specific findings. Fifteen subjects with a clinically diagnosed to PN were included in the study and all subjects undergone skin biopsy. All specimens were stained with hematoxylin and eosin (H&E), periodic acid-Schiff stain (PAS), Giemsa stain, CK 20, CAM 5.2 (CK8,18), neuron specific enolase (NSE) and S 100. Acanthosis, perivascular lymphocytic infiltration, irregular rete-ridge elongation and vertically oriented collagen fibers in the papillary dermis were common findings. However, the findings, Merkel cell hyperplasia and dendritic mast cell were not found. Neural abnormalities were observed in 26.6% and centrally located hair follicle was in 40%. This is preliminary results of our ongoing study and more patients will be enrolled to determine significance of the findings previously emphasized.

Key Words: Prurigo nodularis, Histology

**P227**

**Tumors of the nail apparatus: A 10-year retrospective study**

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A variety of benign and malignant tumors can occur in nail apparatus, causing nail deformities and growths. It is sometimes difficult to diagnosis the nail apparatus tumors because of their similar clinical appearance. Many complications such as nail plate deformity, onycholysis and bone loss can result from the nail apparatus tumors. There are only a few reports about the prevalence and the clinical appearance of nail apparatus tumors. From 2002 to 2012, total of 129 patients with nail tumors were included in this study. Epidemiology, clinical features, histopathologic features, treatment and prognosis were retrospectively reviewed through medical records and pathologic slides. Nail tumors included glomus tumor, fibrokeratoma, digital mucous cyst, granuloma pyogenicum, subungual exocytosis, squamous cell carcinoma, melanoma, and etc. These tumors were usually treated with surgical management. We wish that this report could raise dermatologist’s interest on nail apparatus disorders including nail apparatus tumors.

Key Words: Nail apparatus, Tumor

**P228**

**Utility of EMA immunostaining in the differentiation between palmoplantar pustulosis and pompholyx**

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The association between vesicle formation and acrosyringium has been studied in previous reports on palmoplantar pustulosis (PPP) and pompholyx. In PPP, the acrosyringium is suggested as the major site of pustule formation. The vesicles in pompholyx have been described as spongiosis, independent of sweat ducts. This study determined whether immunohistochemical (IHC) staining for sweat duct can separate PPP from pompholyx. Furthermore, the pathomechanism of pustules and vesicles was considered. We selected 31 cases of PPP (n=12) and pompholyx (n=19) and performed IHC analysis for EMA, GCDFP-15 and CEA. The staining was scored as 0 to 2+. There were some differences in EMA staining patterns. In PPP, EMA was strongly localized in the pustular wall but almost non-existent in the neighboring keratinocytes. In pompholyx, it was expressed diffusely in regional keratinocytes and especially more strongly near the eccrine ducts. EMA was expressed 0 in 25.0%, 1+ in 41.7% and 2+ in 33.3% of PPP, whereas 1+ in 21.1% and 2+ in 78.9% of pompholyx. IHC of EMA is useful diagnostic tool to differentiate between PPP and pompholyx. From the staining patterns, pustules in PPP are thought to originate from acrosyringium, whereas in pompholyx secondary microscopic damage to the acrosyringium seems to transform the immunophenotype of lesional keratinocytes as the disease progresses.

Key Words: Acrosyringium, EMA, Immunohistochemical, Palmoplantar pustulosis, Pompholyx