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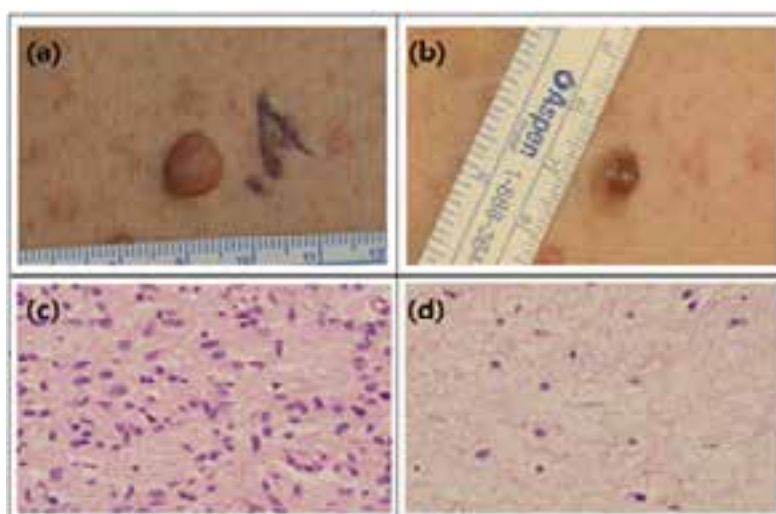
## Nonsurgical treatment using micro-insulated needle on neurofibroma

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Many studies have investigated the application of micro-insulated needles with radiofrequency (RF) for acne treatment or skin rejuvenation. However, there is no study investigating the effects of using micro-insulated needles with RF to treat multiple neurofibroma (NF) lesions. Many patients with multiple neurofibromas usually hesitate to remove all the lesions surgically due to cosmetic concerns. The aim of this study was to evaluate the clinicopathologic outcome, including efficacy and side effects after treatment, using newly developed micro-insulated needles with RF treatment. In this study, two human volunteers received multiple sessions of the micro-insulated needle RF treatment to multiple lesions. Seven to 40 shots were performed on each lesion. The treatment settings were as follows: microneedle penetrating depth of 5.0 mm; insulated 1.0 mm; power 16~46 (level 12~25); and a RF exposure time of 180~400 milliseconds. Skin biopsies were performed before and after the treatment. Outcome assessments included standardized photography, objective measurements of lesion size, histopathologic comparison between before and after the treatment, a physician's global assessment, and patient satisfaction scores. RF energy could be delivered to the lesions without epidermal damage because the micro-insulation on the needle protects the epidermis from skin burns. After a single treatment using the micro-insulated needle with RF to multiple lesions, two human volunteers exhibited significant decreases in size and height of all treated lesions. Skin biopsy specimens revealed decreases in the number of spindle cells in the NF lesions histopathologically as well. There was no severe side effect reported except for transient hyperpigmentation. This study demonstrated the newly developed micro-insulated needles, with RF applicators, appeared to be a safe and effective treatment method for improving neurofibroma lesions both clinically and pathologically.

## Biography

Mi Hye Lee displays expertise in evaluation and holds a passion for studying dermatological science as well as interventional and laser treatment. Her current position is a Medical Fellow in Department of Dermatology, Asan Medical Center and is now pursuing a PhD in University of Ulsan College of Medicine. She has received her MD from Seoul National University College of Medicine, a license to practice in 2011, and a Korean Dermatology Board Certification in 2017. She is a Member of the Korean Medical Association and Korean Association of Dermatology. Her latest clinical trial experiences include, but are not limited to, a study of subcutaneous Secukinumab to demonstrate long-term efficacy, safety and tolerability in subjects with psoriasis, Dupilumab monotherapy administered to Adult Atopic Dermatitis etc. She has also completed the Good Clinical Practice (GCP) held on 19 May 2017 at Asan Medical Center.



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