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Three-dimensional imaging: The future of reflectance confocal microscopy

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Background: Reflectance confocal microscopy (RCM) is an innovative, noninvasive technology that captures in-vivo images of the skin. The Vivascope 1500 (Caliber ID, Rochester, NY) is used to acquire 2-dimensional block, stack, and live video images to accurately diagnose benign, cancerous, and inflammatory skin conditions. Stack images are taken in 0.5×0.5 mm frames, with z-depth slices as thin as 1.5 μm. This presents the opportunity to reconstruct the 2D images into a 3D projection. When a patient presented to our clinic with graft-vs-host disease, RCM was performed for monitoring purposes. Using ImageJ software provided by the National Institutes of Health, we compiled the stack images and isolated a multinucleated, epidermal giant cell. Here, we present our reconstruction of RCM 2D stack images into an interactive 3D model. This model both showcases the entire periphery of the cell, and allows depth visualization into its encased structures. Particularly, 2 nuclei are distinctly shown in this giant cell. Our work holds the potential to influence the future of RCM and dermatopathology, as it demonstrates the advanced imaging capabilities that are possible without invasive procedures.

Commercial disclosure: None identified.

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Associations between cannabis use and cutaneous disorders

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Background: Cannabis use is prevalent in society. However there is little information on the associations between cannabis use and cutaneous disorders. The aim of this study was to determine the association between cannabis use and the most frequently diagnosed dermatologic conditions.

Methods: Data from the National Inpatient Sample (2000-2014), a database consisting of a ~20% stratified sample of all US hospitalizations, were analyzed. Multivariable logistic regression models were constructed to obtain adjusted odds ratios controlling for socioeconomic demographics in cannabis use patients.

Results: Cannabis use was significantly associated with increased odds of 15/25 cutaneous disorders examined. Cannabis use was associated with alopecia areata (adjusted odds ratio [95% confidence interval]): (3.8 [2.8-5.2]), lichen planus (2.1 [1.5-2.7]), keratoderma (2.1 [1.7-2.4]), dyschromia (1.7 [1.4-2.0]), contact dermatitis (2.0 [1.8-2.2]), hidradenitis suppurativa (1.6 [1.5-1.8]), acne (7.4 [6.9-8.0]), psoriasis (1.8 [1.7-1.9]), psoriasis arthritis (1.1 [1.0-1.3]), vitiligo (1.7 [1.4-1.9]), epidermal cysts (1.4 [1.2-1.5]), viral warts (2.9 [2.6-3.1]), sunburn (3.1 [2.6-3.8]), prurigo/-prurigo nodularis (1.7 [1.5-2.0]), and seborrheic dermatitis (1.3 [1.1-1.4]).

Conclusions: Cannabis use was significantly associated with several cutaneous disorders, most notably alopecia areata and acne.

Commercial disclosure: None identified.

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Examining the association between hidradenitis suppurativa and gastrointestinal disorders

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Background: Hidradenitis supurrativa (HS) is a debilitating skin disorder associated with inflammation of the follicuar sebaceous unit. However, little is known about its associations with gastrointestinal (GI) disorders. The goal was to determine these associations.

Methods: Data from the National Inpatient Sample (2000-2014), a database consisting of a ~20% stratified sample of all US hospitalizations, were analyzed. Multivariable logistic regression models were constructed to obtain adjusted odds ratios controlling for socioeconomic demographics in HS patients.

Results: HS was significantly associated with an increased likelihood of 6/18 GI disorders. HS was associated with celiac disease (adjusted odds ratio [95% confidence interval]): (2.2 [1.4-3.4]), gastroesophageal reflux disease (1.1 [1.0-1.2]), inflammatory bowel disease (5.2 [4.7-5.7]), IBS (1.6 [1.4-1.8]), intestinal fistula (3.7 [2.9-4.7]), and nonalcoholic fatty liver disease (1.4 [1.2-1.6]).

Conclusions: HS is associated with increased odds of certain gastrointestinal illnesses, most notably inflammatory bowel disease.

Commercial disclosure: None identified.

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The role of the diet as an adjuvant treatment in scarring and nonscarring alopecia

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Background: Diet is known to affect a wide range of health disorders. Many patients with hair and scalp diseases often inquire about any special diets that may improve their symptoms.

Objective: To evaluate nutrition and diet as adjunct treatments in non-scarring and scarring alopecia.

Methods: A primary literature search using PRISMA guidelines was conducted using the PubMed database in May 2019.

Results: Twenty-five articles with 1792 patients were included. The Mediterranean diet, which is rich in raw vegetables and fresh herbs, and isoflavone-rich soy contain anti-inflammatory nutrients that promote hair health and growth in androgenetic alopecia (AGA). Patients with alopecia areata (AA) and celiac disease can regrow hair with a gluten-free diet. No effect was seen in AA with a lactose-free diet. Sufficient protein is necessary for hair health. The human chorionic gonadotropin diet, hypocaloric diet, and increased fish, buckwheat, and millet groats consumption were possible triggers of AGA, AA, telogen effluvium, or frontal fibrosing alopecia.

Conclusions: The Mediterranean and gluten-free diets as well as diets rich in protein and soy may be potential adjunct therapeutics for the treatment of non-scarring alopecias. The use of diets in alopecia treatment regimens warrants further exploration.

Commercial disclosure: None identified.