340 Atopic dermatitis is not associated with maternal alcohol use or alcohol use during adolescence

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Multiple environmental risk factors contribute towards atopic dermatitis (AD) prevalence and persistence. Maternal alcohol consumption during pregnancy may have pro-inflammatory effects leading to AD in their offspring. Moreover, AD is associated with chronic sleep disturbance, psychosocial distress, stigma, social isolation, anxiety and depression, which might lead to increased alcohol consumption in children and adolescents. We sought to understand the association between 1. maternal alcohol consumption during pregnancy and childhood AD; 2. AD and alcohol use in adolescents. We used data from the Fragile Families and Child Wellbeing Study, a longitudinal US birth cohort study of 48968 urban children. Maternal alcohol use during pregnancy was not associated with the development of AD in offspring at ages 5 (logistic regression; adjusted OR [95% CI]: 1.01 [0.72-1.41], P=0.95) or 9 (0.92 [0.68-1.25], P=0.70). There was a cross-sectional association between maternal alcohol use in the post partum year and AD at ages 5 (1.10 [1.06-1.01], P=0.04) and 9 (1.50 [1.23-1.82], P=0.0007). There were no associations between paternal alcohol use in the past year and AD at ages 5 (0.80 [0.63-1.02], P=0.12) or 9 (0.79 [0.62-1.00], P=0.12). At age 15 years, AD was not associated with increased alcohol use (1.64 [0.83-3.23], P=0.22), in conclusion, there was no association between the alcohol use during pregnancy and development of childhood AD. Childhood AD was not associated with increased maternal alcohol consumption in childhood.

342 Calcipotriene 0.005%/betamethasone dipropionate 0.064% foam as a treatment for nail psoriasis: A case series

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Combination topical corticosteroids and Vitamin D analog treatments for nail psoriasis are widely used in cream or ointment vehicles, but patients may prefer a foam vehicle due to its ease of application and favorable cosmetic appearance. Calcipotriene 0.005%/Betamethasone dipropionate 0.064% foam (Cal/BD) is an FDA approved therapy for plaque psoriasis, but may also be an effective treatment for nail psoriasis to treat with Cal/BD in a case series of three patients in a single-center, secondary care clinic. Patients applied Cal/BD 1-2 times daily to affected nails for at least 4 months. All 3 patients (1 male and 2 female patients; mean age, 49.7 years [range, 42-60 years]) responded positively to treatment with Cal/BD. Remarkable reduction of nail plate surface abnormalities and a decrease in inflammation in the nail folds were assessed with clinical evaluation and dermoscopy, and documented with serial photography. The treatment was well tolerated and no adverse effects were noted for any of the patients. While further research on the efficacy and safety of Cal/BD as a treatment for nail psoriasis is needed, this case series suggests its potential as a combination topical vitamin D analogue and high potency steroid in a foam vehicle.

343 Topological surface mapping with computer vision to measure cutaneous tissue deformation from digital images

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The risks of recurrence and postoperative complications in Mohs micrographic surgery (MMS) can be reduced with increasing lesion size. Clinical errors may be introduced by biomechanical forces that deform tissue during routine MMS manipulations. The purpose of this study is to empirically determine tissue deformation using only before and after digital images and computer vision. We introduce a correlation algorithm that tracks features on tissue before and after manipulation. The isolation of microdots includes the detection of microdots. They were painted onto porcine skin and tracked before and after hypodermal tissue bending and after epidermal flap reconstruction simulations (n=10). Two epidermal flap reconstruction simulations (n=6). Painting resulted in irregularly shaped and nonuniformly spaced microdots. Two-dimensional microdot center coordinates were estimated by the correlation algorithm from digital images and compared to a consensus of two expert-raters using two-tailed Welch’s t-tests. The correlation algorithm detected 83% of microdots overall. The detection of microdots on epidermal flaps was higher before reconstruction than after, though not significantly (91% vs 84%, p=0.16). Detection of microdots was higher on the epidermis than hypodermis (88% vs 80%, p=0.01). The correlation algorithm detected microdot coordinates within an average error of 11 pixels overall. Accuracy was better on the epidermis than hypodermis (9.3±4.3 vs 10.9±4.4 pixels). This simple yet important step towards practically measuring biomechanical forces in the clinic using only digital images of irregular hypodermal microdots. It has been optimized for specificity over sensitivity, with sufficient accuracy to estimate deformation in exchange for a modest loss of resolution. Improving these techniques and introducing additional data such as three-dimensional point clouds will expand the applications of optical mapping in clinical research.

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