In the literature, 3%-22%[1,2] of invasive melanomas were initially considered in situ on partial biopsy specimens. In our study, 90.7% (107/118) of partial biopsies were 3−4-mm punch biopsies, which reduced the surface area analyzed in comparison with the remaining 11 incisional biopsies and increased the risk of missing an invasive component.[3]

Missing an invasion could lead to additional surgical procedures (ie, enlargement of the peripheral margin up to 1-2 cm according to Breslow thickness), resulting in the destruction of the prior wound closure and compromising the implementation of sentinel lymph node biopsy. Moreover, this might also lead to inadvertently treating occult invasive LMM nonsurgically. Alternative treatments to surgery, such as imiquimod (4.2%-50%), radiotherapy, or laser therapy, can represent interesting options for nonoperable patients.[4] But, these techniques are not indicated in cases of LMM and not recommended as first-line therapy for LM in guidelines.

Our study identified 2 independent pathologic predictors of dermal invasion on biopsy specimens of LM: pagetoid spread of tumor cells and presence of moderate-to-strong dermal inflammation. The presence of 1 of these criteria should lead to the performance of an additional hematoxylin-eosin stain or immunostain to search for an invasion[5] or additional biopsies. Of note, we did not take into account regression, which is conceptually defined as an indirect sign of a previous invasion and thus LMM. We propose an algorithm (Fig 1) to optimize LM and LMM management according to the presence of these 2 predictors of invasion.

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Iman Aouidad, MD,[a,b] Céline Fargeas, MD,[c] Pierre Romero, MD,[a,c] Jean-François Sei, MD,[b] Véronique Chaussade, MD,[b] Alain Beauchet, MD,[d] Thierry Clerici, MD,[c] Ute Zimmermann, MD,[c] Philippe Saiag, MD, PhD,[a,b] and Elisa Funck-Brentano, MD, PhD[a,b]

From the Research Unit EA 4340 Biomarkers in Cancerology and in Hemato-oncology, University of Versailles-Saint-Quentin-en-Yvelines, Université Paris-Saclay, Boulogne-Billancourt, France[a]; Department of Dermatology,[b] Department of Pathology,[c] and Department of Public Health,[d] Ambroise Paré Hospital, Boulogne-Billancourt, France

Drs Aouidad and Fargeas contributed to this work equally.

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Correspondence to: Iman Aouidad, MD, Department of Dermatology, Ambroise Paré Hospital, 9 Ave Charles de Gaulle, 92100 Boulogne-Billancourt, France

E-mail: iman.aouidad@gmail.com

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Noncultured epidermal suspension grafting using suction blisters as donor tissue for vitiligo

To the Editor: Noncultured epidermal suspension (NCES) transplantation has been performed since 1992 to treat vitiligo, a chronic, autoimmune skin disorder characterized by depigmented macules and patches.[1] A new NCES technique was proposed, which involves forming suction blisters to obtain donor cells, because of the disadvantages of the standard grafting technique, such as the considerable amount of operator training required to harvest viable cells and potential scarring associated with using split-thickness grafts as donor tissue.[2]

We performed a retrospective review of all patients undergoing NCES in the Pigmentary Disorders Clinic at the University of Texas Southwestern Medical Center. Patients were required to have at least 4−6 months of follow-up

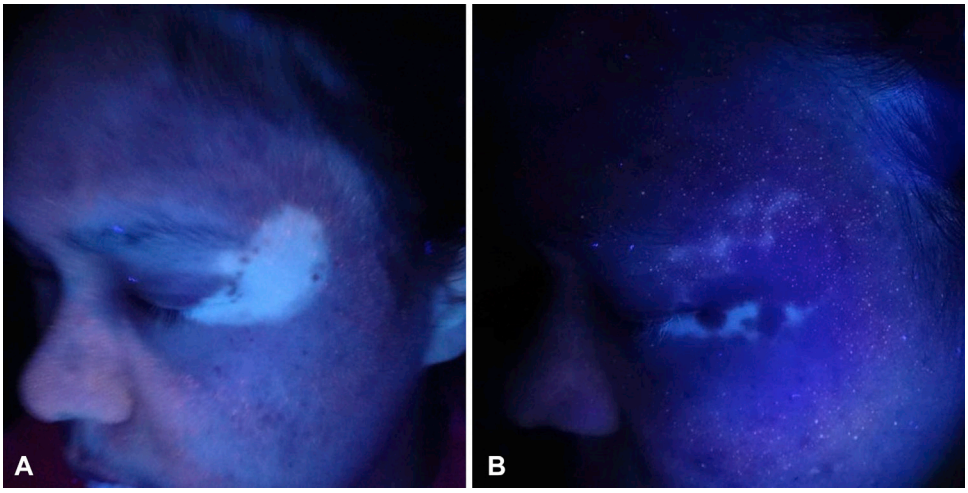

Fig 1. Segmental vitiligo on the face of a 16-year-old Asian girl at baseline (**A**) and 9 months after noncultured epidermal suspension grafting (**B**) showing >75% repigmentation.

evaluation. Disease stability was defined as absence of clinical signs of activity in the past 12 months. NCES was performed according to the protocol described by Jeong et al.[2] Patients were instructed to start narrow-band ultraviolet B phototherapy 1-week posttransplantation. Repigmentation was determined by using a 4-point grading scale: poor (<25% repigmentation), moderate (25%-50%), good (51%-75%), and excellent (>75%). Vitiligo Area Scoring Index (VASI) was also performed at baseline and follow-up evaluations. Side effects and color match were assessed at the final visit.

A total of 11 patients were enrolled. The mean age was 36.2 (±19.1) years. The race/ethnicity distribution was 3 non-Hispanic white, 2 Hispanic, 3 South Asian, 1 black, and 2 other. There were 5 patients with generalized vitiligo, 5 with segmental vitiligo, and 1 with leukoderma induced by laser tattoo removal. The most common recipient site was the face and neck (46%), followed by the extremities (36%). The mean recipient site size was 32.8 (±26.4) cm^2, which required an average of 4 (±2.6) blisters of donor tissue. Average cell viability, determined via cell counting with trypan blue staining, was 72%.

At the first follow-up evaluation, at a mean of 3.9 (±2.3) months, repigmentation was excellent in 1 (9%) patient, good in 3 (28%) patients, moderate in 4 (36%) patients, and poor in 3 (28%) patients. The mean improvement in VASI was 50%. At the second follow-up evaluation, at a mean of 11.2 (±8.6) months, repigmentation was excellent in 3 (28%) patients, good in 4 (36%) patients, and moderate in 4 (36%) patients. The mean improvement in VASI was 71% (Fig 1). The only side effect was mild hypertrophic scarring in 1 patient; 72% of patients had good color match. None of the patients had infections after surgery.

Previous studies of NCES have shown that 55%-71% of patients with generalized vitiligo achieved good-to-excellent repigmentation, similar to the present study, in which 80% of our patients with generalized vitiligo had good-to-excellent repigmentation at the second follow-up visit.[3-5] Long-term follow-up studies have shown higher repigmentation rates (85%-88%) in segmental vitiligo patients, which we did not observed in our study (50% repigmentation with segmental vitiligo patients at second visit), likely because of a short mean follow-up period (8 months) in this group.[4,5] In previous studies, adverse events, mainly hypertrophic scarring and color mismatch, have been observed in 17%-64% of patients, which is higher than what we observed in the present study.[3-5]

Limitations of the present pilot study include small sample size, short duration of follow-up, and subjective measures of recipient site scarring. Disadvantages of suction blisters as donor tissue for grafting include the special equipment and greater time required to form the blisters compared with split-thickness skin grafts. NCES grafts involving the use of suction blisters is a promising new treatment for vitiligo; however, future studies with larger sample sizes and long-term follow-up evaluation are needed.

Andrea Tovar-Garza, MD,[a] Jorge A. Hinojosa, MD,[a] Linda S. Hynan, PhD,[b,c] and Amit G. Pandya, MD[a]

From the Departments of Dermatology,[a] Clinical Sciences (Biostatistics),[b] and Psychiatry,[c] University of Texas Southwestern Medical Center, Dallas, Texas

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Correspondence to: Amit G. Pandya, MD, Department of Dermatology, University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd, Dallas, Texas, 75390-9190

E-mail: amit.pandya@utsouthwestern.edu

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Merkel cell carcinoma incidence, trends, and survival rates among adults aged ≥50 years from United States Cancer Statistics

To the Editor: Merkel cell carcinoma (MCC) is a rare form of skin cancer that frequently metastasizes and is associated with low survival rates.[1] A recent examination of data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program—specifically SEER-18 data, which captures 28% of the US population—revealed an increase in MCC incidence rates during 2000-2013.[2] For the current study, we used data from the United States Cancer Statistics, which combines state cancer registry data from the Centers for Disease Control and Prevention's National Program of Cancer Registries and the SEER program (https://www.cdc.gov/cancer/uscs/about/index.htm), to examine patterns in MCC incidence and survival by sex, age, race/ethnicity, tumor stage, and anatomic site.

We analyzed data from the United States Cancer Statistics Public Use Database, which covered 100.0% of the US population during 2006-2015.[3] Survival data were only available from 39 states participating in the National Program of Cancer Registries data set and covered 81.1% of the US population during 2005-2014, the most recent years for which survival data is available. Analyses were limited to cases ≥50 years because few cases are diagnosed before the age of 50 years (438 cases or 2%), limiting statistical reliability of analyses. We calculated MCC incidence rates per 100,000 persons and annual percent change for the years 2006-2015, age-adjusted to the 2000 US population standard. Five-year relative survival rates for the years 2005-2014 were calculated using the actuarial method.

During 2006-2015, there were an average of 1972 MCC cases/year (19,722 cases total) (Table I). MCC incidence rates increased with increasing age among men and women and were higher among non-Hispanic whites (2.5/100,000 persons), localized stage (1.2/100,000 persons), and tumors located on the head and neck (0.9/100,000 persons). The annual percent change in incidence rates was highest among 70−74-year-olds (4.1%), non-Hispanic whites (2.7%), distant stage tumors (5.0%), and tumors of the upper extremities (2.6%). Five-year relative survival rate was 55.1% among men and 67.7% among women (Table II). Survival rates decreased with later stage and older age at diagnosis and were lowest among non-Hispanic blacks (54.1%) and tumors of the trunk (49.0%).

Consistent with the findings by Paulson et al,[2] these results indicate an increase in MCC incidence rates during 2006-2015 overall, particularly among men >70 years of age, women aged 65-74 years, and non-Hispanic whites. The 5-year relative survival rates for MCC ranged from 35.2% among men ≥85 years of age to 82.9% among women 60-64 years of age and was lower for localized stage (72.5%) than malignant melanoma (83.6%-94.1% among age groups and 97.1% for localized stage).[3]

Using cancer registry data that cover the entire US population, we observed an increasing trend of MCC incidence rates across all stages during 2006-2015. The observed increasing trends among older adults might be related to changes in known MCC risk factors over time at a population level.[4] Such factors include ultraviolet exposure and a weakened immune system.[4] Further research into other causes, prevention, and treatment of MCC is warranted to address the increasing trends and lower survival rates in this type of cancer.

MaryBeth B. Freeman, MPH,[a] Dawn M. Holman, MPH,[b] Jin Qin, ScD,[b] and Natasha Buchanan Lunsford, PhD[b]