tion demonstrated lymph flow across the previous obstruction site along the reconstructed route, which may result from both the reconstructed lymphatic pathway and the flap transplantation. This preliminary report suggests that this operative intervention might be a viable option in the treatment of obstructive lymphedema.

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REFERENCES

1. Slavin, S. A., Upton, J., Kaplan, W. D., et al An investigation of lymphatic function following free-tissue transfer. *Plast. Reconstr. Surg.* 99: 730, 1997.
2. Khazanchi, R. K., Rakshit, K., Bal, C. S., et al. Evaluation of lymphatic drainage and free flaps by lymphoscintigraphy: A preliminary study. *Br. J. Plast. Surg.* 49: 123, 1996.
3. Classen, D. A., and Irvine, L. Free muscle flap transfer as a lymphatic bridge for upper extremity lymphedema. *J. Reconstr. Microsurg.* 21: 93, 2005.
4. Baumeister, R. G. H., Seifert, J., Wiebecke, B., et al Experimental basis and first application of clinical lymph vessel transplantation of secondary lymphedema. *World J. Surg.* 5: 401, 1981.

Biobrane: A Versatile Tool in the Armamentarium of the Reconstructive and Burns Surgeon

Sir:

Biobrane is becoming increasingly popular in the management of superficial and moderate-depth partial-thickness burns. When used appropriately, it has been shown to reduce pain levels, healing time, inpatient stay, and nursing requirements when compared with traditional dressings. We would like to draw the attention of the reconstructive community to the versatility of Biobrane above and beyond these well-known indications.

Biobrane is a biosynthetic wound dressing first developed by Woodruff in 1979. It has many of the "ideal" properties highlighted by Pruitt and Levine in 1984.[1] There is a great deal of literature available outlining the successful use of Biobrane in the management of partial-thickness burns in pediatric patients. There is also evidence for its use in the treatment of partial- and full-thickness burns in the adult, particularly in large burns and those involving joints and the hand. Various application modifications have been published to overcome coverage of difficult areas (e.g., use of the Biobrane glove to dress the foot and the Biobrane "jacket" to dress the torso). In addition to covering the burn wound, it is also used in the management of split-thickness skin graft donor sites, in both burned and nonburned patients. Its use in stenting split-thickness skin grafts has also been advocated.

The use of Biobrane has been reported to cover the axillary defect following surgical excision for hidradenitis suppurativa.[2] This single-stage procedure, with no donor-site morbidity, exhibited the ability to use Biobrane in colonized tissues. The limitations included a longer healing time and increased cost of dressing.

Biobrane has also been used successfully after laser resurfacing of the face.[3] It was well tolerated, minimized pain and drainage, decreased erythema, reduced healing time, and simplified nursing care. Similarly, Biobrane has been used as a dressing after mechanical dermabrasion. This study showed that Biobrane reduced erythema and healing time by up to 50 percent when compared with air-exposed wounds.

The use of Biobrane has been reported in the successful treatment of serious skin conditions, such as toxic epidermal necrolysis[4] and paraneoplastic pemphigus. Biobrane was applied to the extensive areas of erosion to assist in pain management and to provide a temporary barrier function. The treatment of serious skin conditions such as toxic epidermal necrolysis and pemphigus with Biobrane is an area that warrants further evaluation, as it may contribute to the overall treatment and comfort of these patients. Chronic wounds such as large venous ulcers have also been managed successfully using Biobrane.

There are several case reports concerning the use of Biobrane in the contemporary literature. The skin substitute was used in the treatment of a life-threatening esophageal fistula by covering an expandable metallic stent and in the management of subcutaneous colostomy perforation. Biobrane has also been used in the successful management of sternotomy wounds that were not closed immediately due to massive intraoperative edema formation.

Adverse affects following the use of Biobrane are uncommon, but surgeons should be aware of the possibility of contact dermatitis, hypersensitivity, and hypertrophic scarring.[5]

We believe that Biobrane is a highly versatile tool that should be in the armamentarium of all reconstructive and burns surgeons. Further randomized controlled

trials assessing its use in a variety of conditions are warranted.
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DISCLOSURE

None of the authors has a financial interest in any of the products, devices, or drugs mentioned in this communication.

REFERENCES

1. Pruitt, B. A., Jr., and Levine, N. S. Characteristics and uses of biologic dressings and skin substitutes. *Arch. Surg.* 119: 312, 1984.
2. Melkun, E. T., and Few, J. W. The use of biosynthetic skin substitute (Biobrane) for axillary reconstruction after surgical excision for hidradenitis suppurativa. *Plast. Reconstr. Surg.* 115: 1385, 2005.
3. VanderKam, V. M., Achauer, B. M., and Finnie, G. Use of a semipermeable dressing (Biobrane) following laser resurfacing of the face. *Plast. Surg. N Nurs.* 17: 177, 1997.
4. Arevalo, J. M., and Lorente, J. A. Skin coverage with Biobrane biomaterial for the treatment of patients with toxic epidermal necrolysis. *J. Burn Care Rehabil.* 20: 406, 1999.
5. Hassan, Z., and Shah, M. Punctate scarring from use of porous Biobrane. *Burns* 32: 258, 2006.

The Role of Travel Guides in the Prevention of Skin Cancer

Sir:

The association between skin cancer and sun exposure is well documented, yet despite this, sunbathing remains popular.[1] Sun protection advice for travelers could reduce their risk of ultraviolet skin damage and development of skin cancer. We examined the sun protection recommendations in five travel guides to Spain.

Specific sun protection information with respect to "time of day; sun creams; duration of exposure; anatomical sites; clothing; high-risk activities; [and] sunglasses and sun exposure in children" was looked for in the following guides: *Lonely Planet 2003*, *Insight Guides 2004*, *The AA KEY Guide 2004*, *The Green Guide 2004*, and *Fodor's 2005* (Table 1).

Ultraviolet light has direct mutagenic effects and is associated with an increased risk of skin cancers. Melanoma incidence is rising in the United Kingdom, and two-thirds of all cases can be attributed to sun exposure.[2] Prevention by improving public awareness of the risks of sun exposure is essential. An Australian campaign of public education focusing on the use of protective clothing and suncreams[3,4] resulted in a slower rise in melanoma incidence, and new cases were histologically thinner.

The strongest ultraviolet rays are between 2 hours before and 2 hours after solar noon, regardless of cloud cover. During this part of the day, sun block should be applied regularly and not just on "hot days," as recommended by guide B. Factor 15 is the minimum sun protection factor that should be used, but this was only recommended by guide E. Regular reapplication is necessary under routine circumstances but is essential for high-risk activities, where minimal clothing is frequently worn and the sun block is rubbed off, points on which none of the guides commented. That special care should be taken with exposed anatomical sites was not mentioned by any of the guides. The head and neck region, where melanoma is more common, has a prognosis compared with other sites, and yet only hats were recommended by guides C, D, and E. The composition of fabric and whether it is dry or wet is a significant factor in the sun protection afforded by regular clothing. Clothing designed to protect from ultraviolet rays is now available,[5] but they were not recommended by any of the guides. The risks of poor sunglasses that dilate the pupil and yet do not provide protection from ultraviolet A and B light were not highlighted. Sunglasses were recommended by guide C, but not the most beneficial wraparound style. Children are generally unaware of the risks of sunburn and few adults will know that a blistering sunburn before the age of 10 years is associated with an increased risk of melanoma in later life.[6] Sun protection factor 30+ sun creams and protective clothing are essential for children. Only guide E mentioned children, and this was in the context of poor advice.

Travel guide readers are a group of individuals who are at high risk of being sunburned. The guides could help raise public awareness of skin cancer by including a comprehensive section devoted to the dangers of ultraviolet exposure and methods of sun protection.
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