

11. Quaba AA, Wallace AF (1986) The incidence of malignant melanoma (0 to 15 years of age) arising in "large" congenital nevocellular nevi. *Plast Reconstr Surg* 78:174
12. Radovan C (1976) Adjacent flap development using expandable silastic implants. *Am Soc Plast Reconstr Surg Forum*, Boston, Mass, September 30, 1976
13. Trozak DJ, Rowland WD, Hu F (1975) Metastatic malignant melanoma in prepubertal children. *Pediatrics* 55:191

Invited Commentary

L.C. Argenta

Associate Professor and Interim Head, The University of Michigan, Section of Plastic and Reconstructive Surgery, Ann Arbor, Michigan, USA

This paper by Marchac explores the possibility of using two accepted techniques, tissue expansion and the forehead flap, for reconstruction of particularly difficult lesions of the face. The author's ingenuity and his short-term surgical results are to be commented.

Like the author, most surgeons in the world have abandoned the concept of early dermabrasion. Our results, while initially encouraging, proved to be unfavorable in the long-term. Moreover, dermabrasion of the scalp and brow area frequently resulted in significant thinning of the hair in those areas further exposing the recurrent nevus. The problem of the periocular nevus is particularly difficult since multiple types of tissue are required for reconstruction. The majority of periocular nevi in our experience project across the bridge of the nose as well as extending onto the cheek. The involvement of the ear, however, is unusual. The potential for these nevi to degenerate into neoplasm remains an object of debate. The need for excision for cosmetic purposes, however, is accepted universally. The timing as to when such reconstruction should be undertaken varies considerably. Marchac states that he prefers to operate around one year of age. Our own preference is to wait until three or four. Regardless of timing, however, as much of the lesion as possible should be removed by the time the child starts school and begins socialization.

The expansion of the forehead and its use in reconstruction of this difficult area of the face has, as Dr. Marchac states, considerable possible benefits. A large amount of tissue can be very safely expanded quite rapidly. It is imperative, however, that appropriate skin without any hair bearing tissue be used for the reconstruction. Some of the thinner hair of the forehead becomes more obvious when it is brought into the facial area of a child. Color match of this tissue is very good, although there are significant differences in the cheek and

forehead as regards texture and thickness. The adaptation of forehead tissue to the midface is unknown and it will be most interesting to follow these children.

While the results of using forehead skin seem quite acceptable in a child, it must be borne in mind, particularly in a male, that a hair pattern will develop on the face during adolescence. Since the forehead is relatively hairless the contrast between the transferred flap and adjacent normal facial skin may become quite obvious in adolescence, particularly in an individual with a heavy beard growth. The author's suggestion for separate reconstruction of the lower lid with full thickness grafts is important. We have seen several cases in which other physicians have attempted to reconstruct the lower lid and cheek with one expanded flap. Since there is little to resist shrinkage of the flap after transfer ectropion has resulted. In general, we prefer to reconstruct the facial area and then, in a separate procedure four to six months later, perform a full thickness graft to reconstruct the lid separately.

There are two other sources of tissue for reconstruction of this difficult problem which are appropriately mentioned in the text. Our preference in these cases has been to expand the neck tissue and then create a large cheek rotation flap to cover the defect. Again, the lower lid and the area over the glabella should be corrected by separate full thickness skin grafts. This procedure requires expansion of the neck tissues which is technically more difficult than the forehead, and carries a higher rate of implant exposure since this skin is relatively thin. In some cases we have placed the prosthesis beneath the platysma muscle, but have found that rotation of the cheek flap is much more difficult when the platysma is incorporated. For this reason we now prefer placing the prosthesis in the neck in the subcutaneous plane. The flap is then rotated into an appropriate position and

should be secured to underlying firm tissue rather than simply suturing it to the lower lid. This prevents possible ectropion after shrinkage of the flap occurs. The cheek rotation flap has the distinct advantage, particularly in males, to carry a relatively normal hair bearing pattern into the face. We have used this procedure on adults, as well as children, and have been able to achieve cosmetically acceptable results.

A third alternative which Dr. Marchac alludes to is the possibility of expanding skin in the blush area, and using this as a full-thickness graft on the face. The concept of using expanded tissue as a full-thickness graft has been the object of laboratory and clinical study in our department. We initially felt that expanded tissue, because of its increased vascularity, would have a greater "take" than a normal full-thickness skin graft. Our laboratory experiments demonstrated that full-thick-

ness grafts from expanded tissues survived to a statistically equal area as normal full-thickness grafts. The significance of this study is that one can create a significantly larger full-thickness graft with tissue expansion in the neck or upper inner arm for facial reconstruction with primary closure of the donor site. We have clinically employed this technique to develop a large full-thickness graft for coverage of the hand, the forehead, and some facial areas. Our work in this area has been slow since alternatives with local flaps with and without expansion are usually available. The obvious long-term plan of an expanded full-thickness graft would be to develop an extremely large full-thickness graft which could be used to cover the entire face or large areas of it in cases of burn or severe trauma. Work in this area is proceeding at several large centers and results should be available in the near future.