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Eyebrow transplantation: Alternative body sites as a donor source

To the Editor: Aesthetic improvement of eyebrows or their reconstruction after damage caused by trauma or burns is not an uncommon procedure in the field of hair transplantation. The usual hair donor source for such transplantation is the scalp-occipital area.¹⁻³ However, this option is not feasible in some instances because the hair is both too coarse and grows excessively long for the intended eyebrow recipient site. One alternative for the donor source is leg hair, which has been successfully used to improve hairlines in males.⁴ Advantages of using leg hair for eyebrow transplantation are that it is significantly finer compared with typical head hair, and naturally short as a result of a brief anagen (growth) phase.⁴⁻⁶ The latter results in leg hair being similar in length to eyebrow hair, which also permits transplanted leg-to-eyebrow hair to be trimmed much less frequently compared with scalp hair.

This case involves the use of leg hair for transplantation in a 46-year-old Hispanic male born with genetically sparse eyebrows (Fig 1). Using follicular unit extraction, 400 grafts from the leg were transplanted into both eyebrows. Leg donor areas were pretreated with 5% minoxidil for 3 months before surgery to induce anagen phase and then shaved 10 days before surgery to better identify late-phase anagen hair.^{4,7} Follicular unit extraction was performed under local anesthesia using subcutaneous injections of epinephrine (1:100,000) and lidocaine 1%, and bupivacaine hydrochloride 0.25%, without tumescence. A 19G hypodermic needle with the tip modified to form a punchlike instrument was mounted on a rotary tool and enabled a graft to be extracted with minimal damage as



Fig 1. Eyebrow insufficiency. Before hair transplantation to eyebrow.



Fig 2. Eyebrow insufficiency. After hair transplantation to eyebrow, approximately 1 year after surgery.

the axis of the punch cutting edge was directed away from the follicles; there was less need for precision in tracing the angle of the follicle deep to the skin.^{4,7} Although the occasional aid of blunt needle tip dissection is required, this technique facilitates easy removal of hair follicles. Slits were created in preparation for recipient grafting using 19G hypodermic needles inserted with the bevel facing down to accentuate the angle of the hair shaft to the plane of the skin.

Approximately 10 months after transplantation, the patient had complete eyebrows and a high level of satisfaction (Fig 2); length was maintained by trimming at 3- to 4-week intervals. In contrast, eyebrows that are created with transplanted scalp hair would likely require trimming every 10 to 14 days.² Leg donor area healing was excellent. Three other patients with genetically low eyebrow volume have also been successfully treated. The hair source was leg only in 1 patient; leg and forearm in another; and leg, forearm, and nape of the neck in the last patient. Overall hair yield was about 75% to 80% for these 4 patients.

Leg hair width after transplantation generally approximates eyebrow hair caliber and is a better match than traditional head donor-sourced hair because of its finer quality and shorter length. In general, the value of leg hair transplantation to eyebrows should be expected to be independent of the causes of eyebrow hair loss.^{1,8} In some instances, other finer sources of hair if available can be used to augment eyebrow appearance.

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Follicular mucinous nevus: A possible new variant of mucinous nevus

To the Editor: Mucinous nevus is an uncommon nevus initially established by Redondo Bellón et al¹ in 1993. It manifests with diffuse deposition of mucin in the papillary dermis with or without overlying hyperkeratosis, acanthosis, and elongation of rete ridges.² We reported a possible new variant of mucinous nevus with dilation of pores of hair follicles and fibromucinous stroma surrounding hair follicles.

A 4-month-old Japanese boy was referred to us with a congenital asymptomatic plaque, 32 × 17 mm in size, on the lumbar area. The relative size and distribution had been stable. The family had no history of such a skin disorder or parental consanguinity. A physical examination revealed a reddish plaque on the lumbar area (Fig 1). The surface of the plaque was covered with reddish components with centrally located noticeable pores of hair follicles. Localized hypertrichosis around the plaque was present, but localized hyperhidrosis was absent.

A biopsied specimen was taken from the plaque. Hematoxylin-eosin staining showed: (1) dilation of pores of hair follicles, and (2) fibromucinous stroma in the papillary dermis and in the perifollicular dermis (Fig 2, A). Mucinous material was seen among fibroblasts in the perifollicular dermis



Fig 1. Reddish plaque with reddish components with central visible pores of fair follicles.

(Fig 2, B). A specimen staining with alcian blue at pH 2.5 showed not only diffuse deposition of amorphous materials in the papillary dermis but also deposits in the perifollicular dermis (Fig 2, C). The deposits were removed with hyaluronidase digestion. These results suggested presence of hyaluronic acid. Periodic acid–Schiff stain was negative. Elastica van Gieson stain showed an absence of collagen and elastic fibers in the mucin-deposited area, and normal collagen and elastic fibers in the unaffected papillary dermis (Fig 2, D). The plaque is now periodically examined.

Cutaneous mucinosis is divided into primary and secondary.³ Primary cutaneous mucinosis are subdivided into degenerative-inflammatory and neoplastic-hamartomatous mucinoses including mucinous nevus, myxoma, mucinous eccrine nevus,⁴ and nevoid follicular mucinosis.⁵ Mucinous nevus is subclassified into connective tissue nevus of proteoglycan type and combined epidermal-connective tissue nevus of proteoglycan type. The former only shows mucin deposits in the papillary dermis, and the latter also has epidermal nevuslike hyperplasia.

Our case showed hyaluronidase-digestive mucin deposits in the dermis and absence of collagen and elastin fibers in the mucinous area, suggesting diagnosis of mucinous nevus. It was characterized by not only mucin deposits in the entire papillary dermis but also mucin deposits in the perifollicular dermis with dilation of pores of hair follicles. So far, we proposed possibility of another new form of follicular mucinous nevus (combined follicular-connective tissue nevus of proteoglycan type) in mucinous nevus.

In summary, we described a possible new variant of mucinous nevus, follicular mucinous nevus. It is characterized by: (1) dilation of pores of hair follicles, and (2) fibromucinous stroma in the papillary dermis and around hair follicles in the dermis. Previous and present case series indicate