

Surgical Approaches for Vitiligo

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Vitiligo is a common depigmented skin disorder that has a significant impact on the lives of patients. Phototherapy is the mainstay of vitiligo treatment, but requires a long course of treatment, usually six months to a year or more, and does not show satisfactory results in all patients. Therefore, surgical treatment, in which melanocytes are transplanted into the affected area, has been introduced as a viable option for patients with refractory vitiligo. Surgical intervention for vitiligo includes punch grafting, suction blister grafting, and cellular grafting.

Punch grafting was originally reported in 1972 as a method of harvesting a columnar graft from the donor site with a 1-2 mm diameter punching device and transferring it to the vitiligo site. However, it has not been widely practiced because it often leaves cobblestone appearance in the donor and recipient areas, and the larger the surgical area, the longer the surgical time. Recently, a 0.5/0.8-mm micropunch graft has been developed, which can significantly reduce surgical time and achieve more even results.

Suction blister grafting, taking intact epidermis from the donor site using negative pressure and transplanting it to the recipient site, has been widely practiced in the treatment of vitiligo for decades. This method has advantages in the cost-effectiveness and can be applied to medium-sized vitiligo lesions. However, it is often associated with color mismatch and perilesional halo, and difficult to apply for extensive lesions.

Cellular grafting is divided into cultured and non-cultured approaches, and the non-cultured epidermal cell suspension transplantation is preferred, because it can be performed in outpatient clinics without cell culture. In the non-cultured epidermal cell suspension transplantation, melanocytes obtained from small donor skin can be applied to a 5 to 10 times larger recipient lesions immediately after cell separation and dilution. However, it requires a long procedure time and specialized laboratory equipment in addition to a skilled team.

Advances in surgical techniques have greatly increased the range of vitiligo treatments available. Surgical treatment is no longer an alternative to vitiligo treatment, but one of the standard treatments. It is necessary for dermatologists to be more proactive to prevent patients from abandoning treatment even though surgery is available.