STUDIES

AUTOLOGOUS MINIATURE SKIN PUNCH GRAFTING IN VITILIGO

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Forty-five sites of stable vitiligo in 32 patients refractory to medical treatment were subjected to autologous miniature skin punch grafting. Main instruments used were skin biopsy punches 1-3 mm in diameter. Donor sites selected were either gluteal region or extensor aspect of the thigh which were not affected by the disease in the past.

Most of the grafts changed from brown to black and upper scales desquamated within 10-15 days. Uniform perigraft pigmentation was observed by 1-1½ months and 90% area was covered within 3-4 months. The cases were followed up for six months. Fair to excellent results were observed in 87.5% of the cases.

Key Words : Vitiligo, Punch grafting

Introduction

Vitiligo is not only a dermatological problem, but a social stigma due to an erroneous belief that it is a type of leprosy. There are many cases of vitiligo which either partially respond to medical treatment or do not respond at all. Such cases which are neither progressing nor regressing and are refractory to medical treatment for more than one year are known as stable cases, indicating that melanocyte reservoir is no more available for repigmentation in these areas. Various methods like camouflaging, tattooing,[1] melanocyte culture,[2] partial thickness grafting,[3] suction-blister grafting,[4] and autologous miniature punch skin grafting[5-9] have been tried in such cases. The later method was used for the first time by Falabella[10] to treat stable cases and as an adjunct to medical treatment to treat even partially responding cases. This paper presents a study of autologous miniature punch grafting in stable cases.

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Materials and Methods

The study was carried out at M L N Medical College, Allahabad. A total of 45 sites in 32 cases of vitiligo (20 female, 12 male; 11-60 years) were selected for punch grafting (Table 1). Majority of the patients included had

Table I. Age and sex distribuion of the patients

Sl. No.	Age (Years)	Sex F	Sex M	Total	%
1.	11-15	6	0	6	18.75
2.	16-20	6	2	8	25.00
3.	21-25	4	3	7	21.87
4.	26-30	1	4	5	15.62
5.	31 and above	3	3	6	18.75
	Total	20	12	32	

focal (18) or segmental (12) vitiligo; except 2 who had partially arrested generalised vitiligo. Almost all the patients had stable vitiligo for more than 2 years except 2 cases. One had the arrested disease for 1 year and one patient had burnt the patch by use of some indigenous

chemical. All the patients had received either indigenous treatment, PUVASOL or steroid therapy before reporting to us.

Almost all the areas of the body e.g., forehead, eyebrows, face, lip, neck, trunk, arms, hands, fingers, waist, thigh, leg, toes, etc were included for the procedure. In patients having bigger patches the grafting was planned in two stages.

The procedure was explained to the patients and consent was taken for surgery. All the relevant investigations were carried out before undertaking the procedure. Patients were examined for any serious systemic illness and for keloid tendency.

1-2% xylocaine was used as an anaesthetic and adrenaline was used as an adjunct in some patients. Depending upon the area where surgery had to be performed biopsy punches of 1, 1.5, 2, 2.5 and 3 mm sizes were used. In most of the cases donor sites were gluteal region, lateral aspect of thigh or back of trunk. The donor sites were properly cleaned, and after giving anaesthesia, the pieces were removed and collected into kidney tray containing gauze pieces soaked with normal saline. A few extra grafts were taken than required for recipient sites. The grafts taken were as thin as possible. If required, these grafts were trimmed from below. The haemostasis was achieved by pressure over the site.

The recipient site was prepared and draped and grafts slightly smaller in size than donor site were taken. Grafts from recipient site were removed and discarded. Haemostasis was achieved by pressure. The donor grafts were put over the recipient areas. The edges of the grafts were corrected and after giving sofratulle dressing firm pressure was maintained with the help of elastocrape bandage over the area.

The procedure was performed under antibiotic coverage and further antibiotics were given for 5-7 days post-operatively. The bandage was changed over recipient area after 24 hours and final bandage was opened after 5-8 days depending upon the site.

Post-operatively the patients were subjected to PUVASOL. In some patients, steroids were also used when required. The follow-up was done for 3-6 months in all the cases.

Results

On removing the bandage a small scab peeled off from the graft site leaving behind a pinkish area which after 10-15 days started changing to brownish colour and gradually changed to skin colour.

Pigmentation started coming within 1-1½ months. Uniform perigraft pigmentation was seen and several such pigmented islands coalesced together to cover the affected area. Within 3-6 months majority of the cases showed 5-12 mm pigmentation (Table II). In one young girl pigmentation observed was 17 mm.

Table II. Maximun size of pigmentation after surgery

Sl.No.	Size	No.	Percentage
1	1 - 4 mm	10	22.20
2.	5 - 8 mm	19	42.18
3.	9 - 12 mm	13	28.86
4.	13 mm & above	3	6.66

All the patients were followed up for 6 months and the cosmetic results were observed after 3-6 months. More than 3/4 of the cases showed fair to excellent cosmetic matching from normal neighbouring skin (Table III). Complications observed during the procedure and in the follow up period are shown in Table IV. Almost all the donor sites healed with

Table III. Cosmatic Results

Sl.No.	Result		No.	Percentage
1	Excellent	91-100%	8	25.0
2.	Good	76-90%	12	37.5
3.	Fair	51-75%	8	25.0
4.	Moderate	31-50%	4	12.5
5.	Bad	<30%	0	0
	Total		32	100

Table IV. Complications

Sl.No.		No.	Percentage
1.	Cobble stoning	19	22.0
2.	Variegated appea -rance	8	17.76
3.	Keloid tendency	2	4.44
4.	Reactivation of diseases	2	4.44
5.	Graft rejection		
	Due to framycetin sensitivity	0	
	Due to Infection	0	
	Due to movement	1	2.22

scarring within 1-2 months. The scars were superficial and acceptable to the patients.

Cobble-stoning (raised graft surface) was seen in 10 patients in the initial stages but with passage of time in majority of the patients it was rectified. Variegated appearance of pigmentation was noticed in 8 patients. It was mostly observed in those cases where the area was not smooth prior to surgery because of indigenous local treatment.

Keloid tendency was noticed in 2 cases. These patients also showed variegated appearance of pigmentation. The grafting was done on repeated request of the patients. Topical steroids were given and gradually the tendency subsided.

Depigmentation of grafts with peripheral depigmentation of lesions was noticed in 2 cases. In one case disease was stable for one year while in the other the disease was stable for 12 years. These patients showed initial pigmentation for 2½ months, then depigmentation of grafts started with appearance of new lesions. No evidence of secondary infection or contact sensitivity to sofratulle dressing was encountered.

In some of the patients a few grafts were rejected due to movement and a few did not show pigmentation. These sites were regrafted and showed good pigmentation. One patient met with an accident and lost majority of the grafts.

During the study following observations were made:

1. In the hairy areas the hairs pigmented after skin pigmentation.
2. Small grafts showed very good response but very small grafts (1 mm in size) were difficult to keep in position.
3. Big grafts were accepted but cosmetic results were not satisfactory.
4. In dark complexion patients pigmentation was better as compared to fair subjects.
5 Good cosmetic results were observed in cases where the two stage surgery was planned for bigger patches.

Discussion

Majority of the patients were young females. Social stigma and hinderances in matrimonial alliance can easily explain the dominance of this group in the study. No drop outs were noticed in the study during follow up. Probably it was due to eagerness of the patients to get rid of the stigma associated with the disease.

As in most of the studies[5,6,8,9] fair to excellent cosmetic response was noticed in majority of the patients (87.5%). Rest of the patients showed moderate response. However, a longer follow-up is required to

evaluate whether the pigmentation achieved was permanent or not. It has been suggested that colour changes are not only due to melanin spread from the graft edges but also due to melanocyte recolonisation of epidermis within achromic skin.[10]

It may be concluded that the procedure of autologous miniature punch skin grafting is cheap, simple, without serious complications and an answer to refractory cases of vitiligo. However, careful selection of the patients should be done, as the procedure does not change the clinical course of the disease

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