

STORAGE OF SPLIT THICKNESS SKIN GRAFT FOR DELAYED GRAFTING

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Summary :

In 63 patients requiring split thickness skin grafting, by delayed exposed method, the graft was stored by emersion in half emptied normal saline infusion bottles for 2-10 days prior to grafting. The over all take was 90%. The results of skin grafting confirmed that this method has the merit of simplicity effectiveness and universal applicability.

Introduction :

Storage of the skin graft becomes mandatory in the delayed method of skin grafting (Gibrael 1973, Rees and Hughes 1975, Lehman and Sidwai 1975, Shukla et al. 1970) or when a split thickness graft can not be immediately applied to the recipient area because the recipient area is not ready for grafting. There are numerous methods of storage of graft till a later use. These include storage on donor area, storage in saline and storage by deep freeze methods. The drawback of donor area storage is limitation of time of storage and pain on removal of the graft. The deep freeze method is not available universally. There are numerous modifications of storage of graft in normal saline. We describe here a simple method of skin graft storage for delayed use.

Patients and Methods :

A total of 68 patients undergoing skin grafting by the delayed exposed method were studied. The amount of skin graft needed for grafting was determined a day before the graft

was taken. The recipient site was not opened in the operation theatre or at the conclusion of main operation the recipient area was packed with vaseline gauze and loosely bandaged. The choice of anaesthesia was not controlled. Split thickness skin graft was taken by Humby's Knife and the donor area was covered with a vaseline gauze and bandaged. Further management of the donor area was by the method of Rees and Hughes (1975).

The cover of an infusion bottle of normal saline was opened and half emptied. The skin graft was carefully immersed naked in the saline without touching the outside of the bottle. The cap was replaced and the bottle kept in the general compartment of a domestic fridge (4°C) until used.

The skin graft was applied to the recipient area in the ward by a clean but not sterile technique. The excess graft was again stored in fresh saline for future use if needed. The grafted area was left completely exposed. The patients were requested not to move the part for 46-72 hours when graded movement was allowed. The graft was inspected daily and any serous collection was aspirated with syringe and needle. For skin grafts on the leg and foot walking was allowed 14 days later after crepe bandaging the grafted area.

Results :

The period of graft storage varied from 2 to 10 days in 68 patients. The age of the patients varied from 12 to 70 years. There

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were 40 females and 28 male patients. The diagnosis is shown on table I which also shows percentage of the skin take by delayed method of grafting by stored skin. The cause of partial rejection was severe infection in 9 cases. Mild infection occurred in many cases but it was easily controlled by evacuation of pus and antibiotics. Mechanical displacement did not occur in any case. But in 3 cases ischemic fibrotic tissue hampered the take. The cosmetic effect of the graft was good. There was no correlation of graft survival with storage period. In many patients surplus skin was stored and reused in the areas of rejection later on.

Table I

Showing diagnosis and percentage of graft take by delayed method.

Diagnosis	Number	% take
Deep Burn	8	90±4.2
Post Burn Contracture	17	70±9.8
Abative operations for cancer	28	96±2.3
Diabetic ulcers hand and leg	12	90±3.6
Charl's operation for elephantiasis	3	100%
	68	90%

Discussion :

The current popularity of delayed exposed grafting (Rees and Hughes 1975, Shukla et al. 1980) has increased the need for storage of skin graft. Animal experiments have shown that with in the temperature range 0-37° C the survival time of a stored graft is a function of its temperature, lower the temperature the longer the survival time (Mcgragor 1975). For longer survival time of graft, Ringers or Tyrodes solution has been used for wrapping the graft in soaked gauze and then storage in sealed containers in the fridge. Simple emersion of the graft in saline in ordinary infusion bottles was effective and viable method.

The usefulness of this method of graft preservation is further supported by the success of graft take in a variety of situations. In an earlier study Shukla et al (1980) have compared delayed exposed method of skin grafting with immediate method and found the former a superior method of skin grafting. The quality of skin graft had not shown any appreciable change in the delayed method of skin grafting. Normal saline is universally available hence normal saline emersion of the graft is a simple and effective method of skin graft storage.

References

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