

Assessment of Pain, Soakage and Healing of Donor Site after Split Thickness Skin Graft Harvest from Thigh – A Study of 32 Cases

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Abstract: Management of large wounds may be due to various etiologies, mainly trauma or chronic disease, burns etc. Early coverage of such areas is very important as chronic wounds may get infected or lead to disabling contractures ultimately bringing down the quality of life of the patient. To cover such large wounds split thickness skin grafting is necessary and skin needs to be borrowed from the patient's own body. This causes added morbidity to the patient. Hence healing of the donor site becomes a priority to the treating surgeon. We have looked into our experience of pain perception by patients, soakage of dressing and time taken for healing of donor sites when split thickness skin graft is harvested from thigh of the patients. Procedure of skin graft harvest is done using a standard method of harvest and uniform postoperative care was given to the donor site and the findings were recorded.

Findings included the day's upto which donor site dressing soaked, pain, healing time.

Keywords: Healing, Donor site, Split thickness skin graft.

INTRODUCTION

Split thickness skin grafting is the early step in the ladder of reconstruction for coverage of large wounds. It remains pivotal for resurfacing when all the modern methods like micro vascular surgery have failed. Split thickness skin graft can be classified again into thin, medium and thick split thickness.

Donor site care after the harvest of ssg is of utmost importance and every effort should be made for early healing of donor site.

Hence the healing time after the ssg harvest is vital to know, in order to prevent complications of donor site and ugly scarring. Timely healing of donor site will give us an indication of correct procedure being followed at all times.

Aims

- To know the healing time of donor area after harvest of split thickness skin graft.
- To observe the pain perception.
- To observe the duration of soakage.

MATERIALS AND METHODS

This study included 32 patients with large wounds requiring ssg due to either trauma or post burn raw area in the Dept of plastic surgery at st Johns medical college, Bangalore from 2010 to 2011. None of the pts had co morbidities. The donor site chosen was either of the thigh.

Inclusion criteria

- Age 18 to 60 yrs
- Post traumatic raw area

- Post burn raw area.
- Only thigh (un harvested).

Exclusion criteria

- Children
- Chronic diseased pt with diabetes, chronic kidney disease, liver failure,
- Pt on steroids and immunosuppressant drug.
- Graft harvested from other than thigh.

Skin grafts were harvested using a Humby's knife manually. Skins was harvested from the whole of anterior portion of the thigh, lateral, medial and sometimes circumferential.

After the harvest the bleeding was noted and they were classified based on the clinical intraoperative finding as thin and intermediate thickness grafts.

Grafts which were transparent and had the fine punctate bleeding on the bed after harvest were taken as thin and grafts which were relatively opaque with beads

of bleeding on the bed after harvest of graft were taken as intermediate.

All the grafts were thin or intermediate harvested from the same humby knife. After harvest, the donor site was covered with saline adrenaline-soaked mops for 5 mins and then were covered with one layer of paraffin gauze dressing and then 2 layers of dry gauze pieces with a 2 layer cotton rolls of 5 cms thickness bandaged with roller gauges.

On day 14 the dressing were opened up of all pts and looked for signs of healing. On subsequent post-operative days the following were observed- pain with V.A.S grading, soakage of the dressing.

If the pain described was under 5 the analgesics were continued as intravenous, if pain had come down to 2 or 3 the analgesics were converted to oral route. If soakage were found then the outer layer of

cotton rolls were discarded with strict aseptic precautions and a new layer of sterile cotton roll were applied of 5 cms thickness.

The same procedure was followed till there was no soakage and the day of no soakage was recorded for each pt. PT was enquired about the looseness of the dressing on day 10 till day 14.

On day 14 all the donor sites dressings were opened to see the signs of healing. If there were minimal areas of non-healing then dressing were done with paraffin gauze dressing and a layer of dry gauze piece were put with a layer of cotton roll of 5 cms thickness and roller bandages to fix the dressing.

RESULTS

There were 29 male and 3 female with age range from 18 to 60 yrs.

Table-1: Distribution of region of graft harvested and the assessments

Region of thigh harvested	Number	Healing time days	Soakage days mean	Pain grading
Anterior	3	13	3.3	3 and 4
Anterior, medial	7	13	3.5	3 and 6
Antero-medial , lateral	5	13	3.2	2 and 4
Circumferntial	13	13.6	4.2	3 and 6
Medial	1	12	2	3
Anterior,lateral	3	13	3	3 and 4
Total	32			

Table-2: Distribution of thickness of graft harvested and the assessments

Graft thickness	Number of patients	Healing time in days	Pain grade	Soakage
Thin	21	13	2 to 6	5 days
Intermediate	11	14	3 to 6	6 days

Table-3: Side of the thigh harvested

Thigh harvested	Right	Left
Number	12	20

No statistical analyses were possible as no comparison was done. Only the sequence of events was noted in each pt.

DISCUSSION

The donor Site depending on its thickness harvested loses its epidermis, dermis and can be thin, intermediate or thick depending upon the variable amount of dermis [1]. The netted paraffin gauze dressing has been the standard for the coverage of donor sites [2].

In the present study, we have observed the pain component, soakage of dressing and the ultimate healing after harvesting split thickness skin graft. Pain component was measured using the visual analogue scale and we found that depending upon the area (size) of graft harvested the pain component also increases.

We found the maximum pain grading from 3 to 6 in circumferential harvested grafts and minimal pain grading of 2 when a smaller area was harvested. The pain could be controlled by iv analgesics usually narcotic analgesics. The pain grading serially came down in the intensity as the days progressed.

There was no difference in the levels of pain early in the treatment course as shown by Gilman *et al.* [3]. The study by syed *et al.* shows that pain perception is higher with Vaseline based dressings, also over a period of time pain perception decreases with vaseline gauze dressing[4].

Use of analgesics with paraffin gauze group is for long duration and opioids are used for adequate analgesia [4]. In the study by barnea *et al.* the paraffin gauze treated donor site had pain component of 4 in the post op period.

In our study we found that the mean soakage days are 3.3 except in the pts where circumferential grafts were harvested the mean soakage days were 4.2. Hence larger the raw area more is the secretions and hence soakage.

None of the studies have specifically noted the days of leakage or soakage of the dressings with paraffin gauze based dressings. In our study we have observed that the overall mean healing time is 13 days.

We have classified the size of graft harvested and have noted the mean healing time relating to size. We found no significant difference in the number of healing days relating to size.

We also noted that there was not much of a difference in mean healing time relating to the thickness of graft harvested. The study done by Malpass KG also found that there was no correlation between graft thickness and healing time [5].

The pain grading was almost equal for the thickness of graft harvested. We noted that there was very minimal difference noted in the mean soakage days for thickness of graft harvested.

Study done by Syed *et al.* [7] showed the healing time to be 22 days. Study done by Barnea *et al.* [1] shows that vaseline guage treated area required a mean healing time of 10 to 14 days.

The mean healing time for Jelonet dressings was 10.6 +/- 2.8 days [5]. In the study by hassanpour the healing time was 11.2 days [6].

CONCLUSIONS

The mean healing time after harvest of either thin or intermediate thickness graft remains the same i.e 13 days. The pain perception by pts is the same for the thickness of graft harvested.

The duration of soakage is determined by the area of graft harvested. The larger the area the more is the soakage. We would recommend a larger sample for more accurate conclusions.

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