ACQUIRE

**Journal of Orthopedic Practice**

**(ISSN: 2771-3148)** *Open Access*

Research Article Volume 1 – Issue 1

# An Refinement of the Conventional Skin Board

**Aditya Yadav[1], Ravi Kumar Chittoria[2,*], Padmalakshmi Bharathi Mohan[3], Shijina Koliyath[3], Imran Pathan[3], Neljo Thomas[3], Nishad K[3], Dandugula Pavan Kumar[4], Likhita S Singh[4] and Abhishek G Nair[4]**

[1]Junior resident, General Surgery, Department of Plastic Surgery, JIPMER, Pondicherry, India

[2]Professor & Registrar (Academic), Head of IT Wing and Telemedicine, Department of Plastic Surgery & Telemedicine, JIPMER, Pondicherry, India

[3]Senior Resident, Department of Plastic Surgery, JIPMER, Pondicherry, India

[4]Junior Resident, Department of General Surgery, Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry, India

**[*]Corresponding author:** Ravi Kumar Chittoria, Professor & Registrar (Academic), Head of IT Wing and Telemedicine, Department of Plastic Surgery & Telemedicine, JIPMER, Pondicherry, India

**Received date:** 19 November, 2021 | **Accepted date:** 29 November, 2021 | **Published date:** 1 December, 2021

**Citation:** Yadav A, Chittoria RK, Mohan PB, Koliyath S, Pathan I, et al. (2021). An Refinement of the Conventional Skin Board. J Orthop Pract 1(1). doi https://doi.org/10.54289/JOP2100103



## Abstract

Skin boards are a pair of wooden boards used for harvesting skin. It is used to flatten the surface and ease the skin knife to pass underneath the surface. The skin board is used to stretch the skin by pressing the board against the skin and then pulling the two boards apart therefore creating a tension on the skin and flattening the surface. For the easy movement of the knife a lubricant is used on the skin (example- Vaseline). The conventional skin boards scrape away most of this lubricant. A refinement has been made to the conventional skin boards by adding small channels on the surface of the board which allow the lubricant to pass through the board and thus the lubricant remains on the skin. This modification does not reduce the capacity of the skin board to stretch the skin and provides a flat smooth surface for the skin knife to pass.

**Keywords:** Skin grafting; Skin board; Skin knife; Modified Skin board

## Introduction

Skin graft is the cornerstone of plastic surgery. It was first performed by Reverdin and later refined by Brown et al who described in detail full thickness, intermediate thickness and epidermal (Thiersch) grafts and pointed out the uses and disadvantages of each **[1,2,3]**. The basics of skin grafting remain the same till date **[4,5,6]**.

Skin grafts are used in a variety of cases such as traumatic wounds, defects after oncological resections, burn reconstruction, scar contracture release, congenital skin deficiencies, hair restoration, vitiligo, and nipple areola reconstruction **[7,8,9]**. Since it is such a ubiquitous procedure in plastic surgery, it is important that this technique for performing the skin graft should be refined till it reaches perfection. One such advancement will be discussed in this article.

Conventional skin grafting uses two wooden boards to stretch the skin to ease the usage of the skin knife by providing a flat and smooth surface. However, the usage of skin boards leads to loss of lubricant from the surface of the skin. A modification has been made to the conventional skin board to include a number of small columns to the angled edge which

comes in contact with the surface of the skin, so as to allow small streams of lubricant to pass through them and assist the oncoming skin knife.

## Materials and Methods:

A modification was made to the conventional skin board by including a number of small channels to the angled edge which comes in contact with the skin. The channels are placed 1 cm apart and are 1mm in depth. The result is to pass a small stream of lubricant through these channels and assist the easy passage of oncoming knife.

The skin board is usually made up of medical grade teak wood. The conventional skin board was taken to a woodworker and the channels were drilled into the board. Only the side in proximity with the knife having these channels distal end is conventional. The board was sterilized with autoclaving and was ready for use in the operation theatre.

**Fig1:** The modified skin board with channels for the lubricant being shown in use

The patient was a 35-year-old male with no known comorbidities with a raw area over the leg following electrical burn injury. The wound was initially treated with serial debridement and negative pressure wound therapy. Clinically the wound was healthy and had healthy granulation tissue with no active exudation and no signs of infection. The patient was posted for split skin grafting and the modified skin board (Fig. 1) was used for the procedure. It was noted that the ability of the board to tension on the skin was in no way reduced. The lubrication was retained on the skin even after passing the skin board due to the channels

## Discussion

Skin graft is one of the most indispensable techniques in plastic surgery. It is used in many clinical situations, like, traumatic wounds, defects after oncological resection, burn reconstruction, scar contracture, release, congenital skin deficiency, hair restoration, vitiligo and nipple areolar reconstruction [9].

Split-thickness skin grafts can be harvested by a free-hand dermatome [10,11]. A free-hand dermatome offers a quick method of harvesting a skin graft that does not depend on electricity or pneumatic power; thus, it is useful in harvesting small and thin grafts. Infiltration of the subcutaneous tissue with tumnescent prior to using a motorized dermatome can facilitate skin graft harvest, especially when harvesting skin over a bony prominence [12,13]. Also, lubrication with a small amount of lubricant, example- Vaseline ointment, makes it easier to harvest the skin by decreasing the friction between the skin and the dermatome [14,15].

Skin boards are used to create tension and get a smooth flat surface for the skin knife to harvest a skin graft. However, in the usage of the skin board to create tension the boards are run over the donor site, removing the lubricant in the process. The current modification helps in overcoming this problem due to the presence of small channels on the board. The ability

of the boards to maintain tension was in no way reduced. The skin knife was noted to pass easily due to the lubrication. The number of times the lubricant needed to be reapplied was also reduced.

## Conclusion:

The current refinement helps in maintaining the lubricant on the skin surface and helps in easier passage of the skin knife. We used this skin board in one patient and have found that it greatly improves the performance of the skin graft knife.

## References

1. Reverdin JL. (1869) Greffes epidermiques. Bulletin de la Societe Imperiale de Chirurgie de Paris. 10:51.

2. Lawson G. (1871) On the transplantation of portions of skin for the closure of large granulating surfaces. Transactions of the Clinical Society of London. 41(2): 173-174.

3. Ollier L. (1872) Greffes cutanee ou auto plastiques. Le bulletin-Académie Nationale de Médecine de Paris. 1: 243.

4. Thiersh C. (1874) Uber die feineren anatomischen veranderungen bei aufheilung von Haut auf granulationen. Verhandlungen der Deutschen Gesellschaft für Chirurgie. 3: 69.

5. Blair VP, Brown JB. (1929) The use and uses of large split skin grafts of intermediate thickness. Surgery Gynecology & Obstetrics. 49: 82.

6. Brown JB, McDowell F. (1949) Skin Grafting. 2nd edition. Philadelphia, Pa, USA: JB Lippincott.

7. Valencia IC, Falabella AF, Eaglstein WH. (2000) Skin grafting. Dermatol Clin.18(3): 521-532.

8. Ratner D. (1998) Skin grafting: from here to there. Dermatologic Clinics. 16(1):75-90.

9. Mutallik S, Ginzburg A. (2000) Surgical management of stable vitiligo: a review with personal experience. Dermatol Surg. 26(3): 248-254.

10. Lee SS, Tsai CC, Lai CS, Lin SD. (2000) An easy method for preparation of postage stamp autografts. Burns. 26(8): 741-749.

11. Harashina T, Iso R. (1985) The treatment of leukoderma after burns by a combination of dermabrasion and “chip” skin grafting. Br J Plast Surg. 38(3): 301-305.

12. Ragnell A. (1952) The secondary contracting tendency of free skin grafts. Br J Plast Surg. 5(1):6-24.

13. Silverstein P, McManus WF, Pruitt BA. (1972) Jr Subcutaneous tissue infiltration as an adjunct to split-thickness skin grafting. Am J Surg. 123(5): 624-625.

14. Kishi K, Ninomiya R, Okabe K, Konno E, Katsube K, et al. (2010) Treatment of giant congenital melanocytic nevi with enzymatically separated epidermal sheet grafting. J Plast Reconstr Aesthet Surg. 63(6): 914-920.

15. Fatah MF, Ward CM. (1984) The morbidity of split-skin graft donor sites in the elderly: the case for mesh-grafting the donor site. British Journal of Plastic Surgery. 37(2): 184-190.

16. Tanner JC, Vandeput J, Olley JF. (1964) The mesh skin graft. Plast Reconstr Surg. 34: 287-292.