

## **Free Para Scapular Flap (FPSF)\* for Skin Reconstruction**

In the hand and the distal third of the forearm, the significant skin loss is of a special importance. Providing skin coverage of high quality is the only guaranty to ensure full recovery of function. This inevitability evokes the free skin flaps as the one and only choice of treatment. Here after, we will present a clinical case of a huge skin loss in the right forearm that ultimately replaced with a free para scapular flap; *figure (1)*.



**Figure (1)**

**Pre-operative view, the right forearm few days after the initial trauma.  
A large party of the skin, muscles, tendons, and ulnar nerve and artery were lost.**

However, three years early, the skin coverage was simplified with the recruitment of a traditional partial thickness skin graft with, for sure, disappointing outcomes. It was impossible to extend the long fingers despite the fitness of the corresponding system. The right forearm lost the ulnar half of its circumference with a significant psychological impact on the patient; *figure (2)*.



**Figure (2)**

**The same right forearm three years and a half later.  
The traditional partial thickness skin graft survived may on the benefit of the hand's function.  
The forearm lost the totality of its ulnar half.**

Finally, the Free Para Scapular Flap was used in order to replace the lost and improve the function at the same time; *figures (3) & (4)*.



**Figure (3)**

**Per-operative view.**

**The patient on his right lateral decubitus, his right forearm on the side table.**

The left Para Scapular Flap (PSF) was chosen and was carefully outlined (15X8cm). In such position and choice, two surgical teams could simultaneously work on; one to harvest the flap and the other to prepare the recipient field. The Triangular Space (TS) was preoperatively identified, and the emerging point of the Scapular Circumflex Artery (SCA) was marked (x).

Three elements form the famous TS; the Teres Major Muscle (TMaM) inferiorly, the Teres Minor Muscle (TMiM) superiorly, and the Triceps Brachii Muscle's long head (TBM' long head) laterally. Approximately, it is one centimeter below the midpoint of the lateral border of the scapula. Practically, by the assistance of the intraoperative Echo Doppler we could identify and draw the projection of the nutritional artery (SCA) on the flap's skin. Such a method greatly helps protecting the nutritional artery (SCA) during the harvesting process. We started harvesting the flap from distal to proximal. The anatomical elements to be looked for at first are the Latissimus Dorsi Muscle (LDM), TMaM, and TMiM respectively. Great attention should be present while detecting the latest muscle (TMiM). The nutritional artery (SCA) hides just below it in the areolar tissue of the TS. The nutritional artery (SCA) of the FPSF should then be precisely identified and carefully followed, if necessary, to its origin from the Subscapular Artery (SA). Sometimes, in order to gain much more length of the flap's vascular pedicle, another surgical approach may be assumed in the axilla. Thus, we can advance the vascular pedicle's pursuit to the origin on the Axillary Artery. If so done, we might obtain one artery and one vein of suitable diameter and length for any future vascular anastomosis in the recipient field.



**Figure (4)**

**Per-operative view, the harvested FPSF.**

The FPSF was of a suitable thickness and dimensions to fill up the hollow induced by the initial trauma. The good quality of the skin and the subcutaneous tissues would protect the released tendons and the median nerve in such way an improvement of their mobility were predicted. Nevertheless, the upcoming adhesions and the consequent restrains to the tendons' mobility should largely be minimized.

On the recipient field, we peeled the injured forearm of the condemned skin graft. Then, the fixed tendons and median nerve have been released. The stump of the Ulnar Artery (UA) has been identified and been exteriorized for more comfort in performing the soon coming anastomosis with the nutritional artery of the flap. For the venous drainage, one of the

superficial vein of the region has also been prepared to receive the venous return from the flap.

The FPSF has been placed in its ultimate situ. Its vascular pedicle was oriented in proximal direction. An arterio-arterial end-to-end anastomosis, as well as, a veno-venous end-to-end anastomosis, between the FPSF's and recipient's vascular pedicles, have been done; *figures (5) & (6)*.



**Figure (5)**  
**Per-operative view, the FPSF in situ.**



**Figure (6)**  
**The 4<sup>th</sup> post-operative day view**

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*(\*) Another case report of using free parascapular flap in skin reconstruction on the following link:*

[" Reconstruction of the Leg' Skin Using Parascapular Flap "](#)

***In another context, one could read:***

- *Neural Conduction, Personal View vs. International View (Innovated)*



*Neural Conduction, Action Pressure Waves (Innovated)*



*Neural Conduction, Action Potentials (Innovated)*



*Neural Conduction, Action Electrical Currents (Innovated)*



*The Function of Action Potentials (Innovated)*



*The Three Phases of Neural Conduction*



*Neural Conduction in the Synapse (Innovated)*



*Sensory Receptors*

- *Nodes of Ranvier, the Equalizers (Innovated)*



*Nodes of Ranvier, the Functions (Innovated)*



*Nodes of Ranvier, Function N1 (Innovated)*



*Nodes of Ranvier, Function N2 (Innovated)*



*Nodes of Ranvier, Function N3 (Innovated)*

- *The Philosophy of Pain, Pain Comes First! (Innovated)*

- *The Philosophy of Form (Innovated)*

- *Spinal Injury, pathology of Spinal Shock, Pathology of Hyperreflexia*



*Spinal Shock (Innovated)*



*The Clonus (Innovated)*



*Hyperactivity Hyperreflexia (Innovated)*



*Hyperreflexia, Extended Sector of Reflex*



*Hyperreflexia, Bilateral Responses*



*Hyperreflexia, Multiple Responses*

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*Wallerian Degeneration (Innovated)*



*Neural Regeneration (Innovated)*

- *Wallerian Degeneration Attacks Motor Axons, While Avoids Sensory Axons*



*Barr Body, the Whole Story (Innovated)*



*Boy or Girl, Mother Decides!*



*Adam's Rib and Adam's Apple, Two Faces of one Sin*



*The Black Hole is a (the) Falling Star?*



*Adam's Rib, could be the Original Sin?*



*Pronator Teres Syndrome, Struthers like Ligament (Innovated)*

16/4/2017