

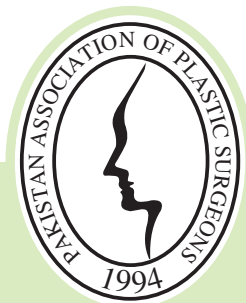
*Volume 1 Number 3*

*November 2012*



# P J P S

**PAKISTAN JOURNAL OF PLASTIC SURGERY**



**Official Publication of  
Pakistan Association of Plastic Surgeons**

[www. pjplasticsurgery.com](http://www.pjplasticsurgery.com)



New BioDesign Series of Implant

### melan:off™ pack



### md:peel™ TREATMENTS



COMPLEMENTARY PRODUCTS FOR ALL AESTHETIC TREATMENTS



SMOOTHING · FILLING · MODELLING · REHYDRATING TO PERFECTION



### Compression Garments

Custom Made & Prefabricated



### Head Office:

4/A Mozang Road, Lahore-54000 Pakistan.  
Ph: +92-42-37223391-5  
Fax: +92-42-37350624

### International Office:

Ph: +97 15 52 94 9924

**Helpline: 0300 8460 786**

### Branch Offices:

**Abbottabad** Ph: +92-346-957 32 69  
**Faisalabad** Ph: +92-345-842 87 09  
**Gujranwala** Ph: +92-321-443 11 42  
**Karachi** Ph: +92-321-849 47 44

**Kohat** Ph: +92-300-915 85 95  
**Multan** Ph: +92-321-438 06 72  
**Mardan / Sawat** Ph: +92-323-927 64 46  
**Mirpur (AJK)** Ph: +92-333-581 82 64

**Peshawar** Ph: +92-321-912 73 18  
**Rawalpindi / Islamabad** Ph: +92-321-443 11 27  
**Sialkot** Ph: +92-321-957 89 17



# P J P S

**PAKISTAN JOURNAL OF PLASTIC SURGERY**

Volume 1

Number 3

November 2012

## **PUBLISHER**

**Pakistan Journal of Plastic Surgery**

## **EDITORIAL BOARD**

## **PATRON**

**Dr. Saleem Akhtar Malik**  
Diplomate American Board  
(Plastic Surgery)

## **CHIEF EDITOR**

**Mohammad Mughese Amin**  
Associate Professor Plastic Surgery  
Quaid-e-Azam Medical College  
Bahawalpur

## **EDITOR**

**Dr. Shahab Ghani**

## **PRESIDENT PAPS**

**Dr. Mauzzam Nazeer Tarar**

## **GENERAL SECRETARY**

**Dr. Tahmeed Ullah**

## **MEMBERS**

**Dr. Saeed Ashraf Cheema**  
**Dr. Ehtisham**  
**Dr. Zia-ul-Islam Kahachi**  
**Dr. Obid Ullah**  
**Dr. Tahir Sheikh**  
**Dr. Naheed Ahmed Ch.**  
**Dr. Nasir Uddin Khan**

## **INTERNATIONAL FACULTY**

**Dr. Riaz Malik**  
(HULL U.K.)  
**Dr. Muhammad Adil Abbas Khan**  
(HULL U.K.)

## **CONTENTS**

**Aivar Bracka Fellowship “A Step Forward Towards Finding a Simple Solution to a Common Anomaly”** 01

**Dr. Tariq Masood**

Department of Plastic Surgery Liaquat National Hospital Karachi.

**Management of Hand Burns** 04

**Dr Muhammad Ahmad**

Plastic, Reconstructive & Hand Surgeon  
Aesthetic Plastic Surgery, Islamabad Private Hospital,  
Islamabad PAKISTAN

**One Year Audit of Soft Tissue Reconstruction of Foot Defects** 08

**Dr. Mamoon Rashid**

Department of Plastic Surgery, Shifa International Hospital, Islamabad, Pakistan  
Correspondence: Dr.mamoon Rashid Consultant plastic surgeon.

**Fodder Cutter (Toka) Injuries, a Preventable Tragedy. Our Experience at Jinnah Hospital Lahore** 13

**Dr. Ata Ul Haq**

*Senior Registrar*  
*Department of Plastic Surgery,*  
*Allama Iqbal Medical College/Jinnah Hospital, Lahore*

**Study of Cases of Tattoos with Regard to Surgical Treatment** 20

**Mohammad Ashraf Ganatra**

MBBS, MS(Plast Surg)  
Assistant Professor  
Sikander Bhura FCPS Senior Medical Officer  
Department of Plastic Surgery, Dow Medical College & Civil Hospital, Karachi

**INSTRUCTION TO AUTHORS** 23

# Aivar Bracka Fellowship “A Step Forward Towards Finding a Simple Solution to a Common Anomaly”

Dr. Tariq Masood, Dr. Abdul Ghafar, Dr. Obaidullah

## **Introduction:**

Hypospadias is defined as a defect in the development of ventral aspect of the penis with an ectopic opening of the urethral meatus. It has an incidence ranging from 1 in 200 to 1 in 300 live births (1). More than 300 procedures have been described in literature for treating hypospadias and these being carried out by pediatric surgeons, urologists and plastic surgeons (2). This has led to poor results with more complications. Meanwhile there is no universal agreed protocol to treat this common congenital anomaly. It is said that to learn hypospadias techniques residents should spend sufficient time of training with an experienced surgeon at a dedicated center where such cases are referred. This leads to improved learning curve and less complications with ultimate benefit of patients. The role of fellowship programmes for improving skills and trainee satisfaction is well documented in some studies (3). Keeping in view these facts a fellowship programme was announced by PAPS in its 17<sup>th</sup> annual meeting held at Bahawalpur in February 2012. It was named “Aivar Bracka Fellowship “to honor Aivar Bracka for his enormous contribution to hypospadiology. In this article we describe our humble experience of fellowship programme so that residents and fellows are encouraged to get this fellowship. This fellowship will help trainees to find a simple algorithm to treat hypospadias.

**Key Words:** *Aivar Bracka, hypospadias snot grass snot graft.*

## **Materials and Methods**

First Aivar Bracka fellowship was held at North west General Hospital and Research Center Peshawar. Professor Obaidullah was the organizer of fellowship programme. Two trainees, one from Liaqat National Hospital Karachi and other from Jinnah Hospital Lahore were selected for first Aivar Bracka fellowship. All surgeries were performed by senior author while trainees assisted him. Duration of workshop was 3 months and 30 patients of hypospadias were operated during this time. Among procedures performed were Bracka 1st stage, Bracka 2nd stage, Snodgrass, Snodgraft and fistula repair. Patients were referred from all over country.

Some patients were referred from abroad like U.K, Iraq and Saudi Arab as well. Patients operated were males and age group ranged from

one year to 30 years in case of hypospadias cripples. Regular discussion and use of internet and hospital library for collecting recent trends and advances in Hypospadias surgery was essential component of fellowship training programme. Residents' accommodation and transport facility was provided by hospital. Dr Obaid also paid stipend to one of candidates and he intends to pay one resident in future as well.

## **Results**

During 3 months period 30 cases of hypospadias were operated by senior author. The number and types of procedures done are shown below in table 1. Trainees also got opportunity to examine patients other than hypospadias.

## **Dr. Tariq Masood**

*Department of Plastic Surgery Liaqat National Hospital  
Karachi.*

*Phone: 0333-9119848*

*E-mail: tariqmasood88@gmail.com*

**TABLE 1**

Procedure done	No of patients	Presentation	Graft Used	Complications
Stage 1 AB	5	Proximal hypospadias	Prepuce/buccal mucosa	None
Stage 2AB	10	Already done stage 1	N/A	None
Snodgrass	7	Distal hypospadias	N/A	None
Snodgraft	8	Fistula/Inadequate urethral plate for Snodgrass	Buccal for fistula and prepuce for inadequate plate	None

The number of patients and variety of cases other than hypospadias is described below in

**TABLE 2**

Burn and SSG	12	Scalp reconstruction	3
PBC release and SSG	3	Debridement and VAC	5
Cleft lip and palate	6	Miscellaneous	5
Vascular malformation	3	(Torticollis)	1
Bcc face excision and flap	6	(Serial excision scar face)	1
Abdominoplasty	2	(In growing toe nail)	1
Rhinoplasty	5	(Keloid excision)	1
Fat grafting	6	(Eye brow reconstruction)	1
Hand surgery	8		

## Discussion

Hypospadias is a congenital penile defect in which urethra opens onto ventral part of penis, scrotum or perineum. Hypospadias is classified as anterior, middle or posterior according to location of ectopic meatus. Anterior are glanular, coronal, subcoronal and distal penile. In middle urethral meatus is placed at mid or proximal penile shaft and posterior encompasses penoscrotal, scrotal and perineal hypospadias. Hypospadias surgery is not for inexperienced surgeon and many repair procedures are difficult to learn. To learn and master techniques trainee should spend sufficient time with an experienced surgeon who is having an annual volume of 50 cases at least. (4).

Dr Obaidullah is an experienced UK trained plastic surgeon who has worked with Aivar Bracka and Snodgrass. He published his hypospadias series in BJPS in 2005 which is largest series in English literature (5). During 3 months trainees stay, 30 hypospadias surgeries were performed in Northwest General hospital. North West General Hospital and Research Center is 200 bed teaching hospital which is

recognized by PMDC for house job and by CPSP for plastic surgery training (6). During trainees stay a medical team from Shiraz University Iran visited hospital and admired the state of art care provided by NWGH and RC.

For distal primary hypospadias Snod Grass repair was used by the senior author which is now international standard approach for distal variety as well (7). Use of xylocaine with adrenaline as penile block and local infiltration was a new interesting thing to learn for trainees. Fine minute details of Snodgrass repair were nicely explained by Dr Obaid. Trainees appreciated the importance of slit like central meatus in repair technique.

If the urethral plate did not have to be transected and only required circumference augmentation then this was achieved with Snod Graft repair. Snod graft technique has gained important role recently in hypospadias surgery. It has established its role somewhere in between Snodgrass and Bracka 2 stage repair. For Snod Graft repair, graft was taken from inner prepuce because of its reliable take, flexibility and no potential for hair growth. In cases where child has

already been circumcised, buccal mucosal graft was author first choice. Buccal mucosa is a reliable and durable graft and is widely used in hypospadias surgery (8). In difficult and redo cases where it was not possible to maintain axial integrity of urethral plate and a full circumference urethral reconstruction was necessary he opted for Aivar Bracka technique. In most world renowned hypospadias centers these three procedures are being performed and this is now becoming an accepted protocol by and large. It was easy for Trainees to learn three techniques and apply them to almost all primary and redo hypospadias cases in future practice. This was comparable to a study done by Aivar Bracka. (9) In short follow up in Outpatient department no immediate complications were seen by trainees. Trainees also had good opportunity to examine patients other than hypospadias. At the end of fellowship a participation certificate was offered to trainees.

### Conclusion

To learn hypospadias repair trainees should spend considerable part of their training at specialized centers. To improve standards of care for patients all such cases should be referred to specialist centers. It is suggested that PAPS and CPSP

should reorganize their training programmes that should encourage residents to participate in such fellowship programs.

### References

- (1) BaskinLS, Colborn T, Hypospadias and endocrine disruption: is there a connection? *Environ Health Perspect* 2001; 109:1175-83.
- (2) Van der Werff, Van der Meulen Jc. Treatment modalities for hypospadias cripples. *PRS* 2000; 105:600-8
- (3) Von Web SkyMN, Ober Kofler CE, Rufibach K Trainee satisfaction in surgery residency programmes surgery 2012 nov; 152(5):794-801.
- (4) Titley OG, Bracka A. A 5 year audit of trainees experience and outcome with two stage hypospadias surgery. *BJplast Surg* 1998; 51:370-5
- (5) Obaiullah, M Aslam Ten-year review of hypospadias surgery from a single centre. *BJPS* 2005; (58):780-789.
- (6) [www.nwgh.pk](http://www.nwgh.pk)
- (7) Springer A, Krois W, Horcher E Trends in hypospadias Surgery: results of worldwide survey *Euro Uro* 2011 Dec; 60(6):1184-9.
- (8) Sahin Coskun, Seyhan, Tamer Use of buccal mucosal graft in hypospadias *annals of plastic surgery* April 2003; 50(4):382-386.
- (9) Bracka A. The role of two Stage Repair, modern hypospadiology. *Indian J Uro* 2008; 24:210-218.



# MANAGEMENT OF HAND BURNS

Dr. Muhammad Ahmad

## ABSTRACT:

Hands are susceptible to burn injuries. It is essential that hand burns be treated early, aggressively, adequately and skillfully for the best possible outcome to be obtained. The aim of the treatment in burns of the hand is prevention of scarring, rapid re-covering with the skin and maintenance of mobility of the joints. The main aim of this study was to present the data and characteristics of hand burns presenting in a private setup. The study was conducted from June 2005 to June 2008 in a private setup. All the patients presenting with hand burns were included. Patients < 12 years were excluded from the study. Only the patients presenting with fresh burns of one month old were included. The superficial burns were managed by daily dressings and were left for secondary healing. The deeper burns were excised and skin grafting was done. In few cases, where deeper tissues were involved especially, the flap surgery was performed. Total 52 patients were included in the study. The male to female ratio was 2.25:1. The mean age of male patients was 30.3 years and 27.2 years in females. Majority of the males had flame burns (38.9%) followed by electric burns (36.1%). Among the females, scalds (43.8%) was the commonest cause followed by flame burn (37.5%). Majority of the patients (76.9%) had burns of dorsum of hand. Thumb was involved in 30.8% patients. Web spaces were involved in 34.6% patients. In majority of the patients (48.1%), skin grafting was undertaken. 34.6% patients were left for secondary healing. In 17.3% cases, flap surgeries were performed which included cross-finger flap, posterior interosseous flap, abdominal pocketing. In all cases, compression gloves were used postoperatively once the healing was stable. Only one case of flap infection and one case of partial flap necrosis was seen.

**Key Words:** deep burns tangential shave, full thickness graft.

## INTRODUCTION

Hands are susceptible to burn injuries. At work hands are usually the closest body part to dangerous flames, chemicals or electricity. Hands are also used to protect other parts of the body especially the face, from heat or flame<sup>1</sup>. Because the hands have such an important functional role, it is essential that hand burns be treated early, aggressively, adequately and skillfully for the best possible outcome to be obtained<sup>1</sup>. The philosophy of letting hand burns heal with conservative care and then planning later reconstructive surgery leads to very poor results. The aim of the treatment in burns of the hand is prevention of scarring, rapid re-covering with the skin and maintenance of mobility of the joints<sup>2</sup>.

### Dr Muhammad Ahmad

Plastic, Reconstructive & Hand Surgeon  
Aesthetic Plastic Surgery, Islamabad Private Hospital,  
Islamabad PAKISTAN  
Phone: 0300-5239465  
E-mail:

Infection should be prevented, and the wound closed as quickly as possible. Achieving optimal results depends almost entirely on the successful management in the acute and subacute phases<sup>3,4</sup>. Although various studies have been published on burns in Pakistan<sup>5-7</sup>, but none has been done exclusively on hand burns. The main aim of this study was to present the data and characteristics of hand burns presenting in a private setup.

## PATIENTS AND METHODS

The study was conducted from June 2005 to June 2010 in a private setup. All the patients presenting with hand burns were included (both treated as indoor or out patient). Only patients  $\geq$  12 years were included. Patients < 12 years were excluded from the study. Only the patients presenting with fresh burns of one month old were included. Patients presenting with postburn deformities, congenital deformities or hand trauma were also excluded.

All the patients presenting with hand burns were evaluated systemically. The condition and extent of burns was noted. The wounds were

thoroughly washed and 2% silver sulphadiazine cream was applied. The burned hand was placed in the ploythene glove to keep the hand moist and to keep the mobility of fingers and hand. The dressing was changed after every 12-24 hours. Hand elevation was done.

Wound swab cultures were taken at the time of change of first dressing. The daily dressings were continued for 2-4 weeks or until the definitive treatment was undertaken. The superficial burns were managed by daily dressings and were left for secondary healing. The deeper burns were excised and skin grafting was done. In few cases, where deeper tissues were involved especially, the flap surgery was performed. The complications occurring during the course were noted and managed accordingly.

## RESULTS

Total 52 patients were included in the study. The male to female ratio was 2.25:1. The mean age of male patients was 30.3 years (range 14-54 years) and 27.2 years (14-51 years) in females. Majority of the males had flame burns (38.9%) followed by electric burns (36.1%). Among the females, scalds (43.8%) was the commonest cause followed by flame burn (37.5%) (Table 1). Majority of the patients (76.9%) had burns of dorsum of hand. Thumb was involved in 30.8% patients. Web spaces were involved in 34.6% patients (Fig. 1).

The microorganisms isolated from the wounds were gram negative bacilli (59.6%) followed by Staphylococcus aureus (34.6%) in the first week (Table 2). But the microorganisms isolated prior to definitive treatment after 1 week were gram negative bacilli (98.1%) followed by Staphylococcus aureus (40.4%) (Table 3).

In majority of the patients (48.1%), skin grafting was undertaken. 34.6% patients were left for secondary healing. In 17.3% cases, flap surgeries were performed which included cross-finger flap, posterior interosseous flap, abdominal pocketing. In all cases, compression gloves were used postoperatively once the healing was stable. Fasciotomies were performed in 19 patients.

In 7.7% partial graft loss was observed. Only one case of flap infection and one case of partial flap necrosis was seen. In long term

complications, 2.8% patients had hypertrophic scarring and one case of web space contracture was seen. The abnormal scarring was managed by conservative methods.

## DISCUSSION

Although hand burns represent a small wound area but is regarded as 'severe' because of the potential short and long-term disability. The early and prompt management of hand burns results in low morbidity and disability<sup>8,9</sup>. The severity of hand burns depend on the nature of the causative agent, temperature and time of contact. Scalds commonly result in medium-thickness burns whereas hot oil and electric injuries result in deeper burns. The most important point in management of hand burns is the release of any increased intra-compartment pressure. Early Fasciotomy results in improved hand function<sup>10</sup>. Very few studies have been done exclusively on the hand burns<sup>9,11,12</sup>.

In the study by Chein et al, carried out in Taiwan, showed that more than 22% of the patients had hand burns<sup>13</sup>. Similarly in another study by Tariq et al more than 25% of the patients presented with hand burns<sup>6</sup>. In the present study, the mean age of the patients was 29.3 years which is very less as compared to other studies<sup>6,7</sup>. Most of the patients had workplace accidents.

Superficial burns were treated conservatively with daily dressings with 2% silver sulphadiazine. These patients were advised to wear stockings. Majority of the patients (48%) had skin grafting in the present series. Vacuum assisted closure therapy (VAC) was used in 9.6% of the patients and later covered with a partial-thickness skin graft in the present study. Similar to the study by Weinand et al but he used superficial inferior epigastirc flap in stead of skin graft<sup>14</sup>. The skin graft provides the least invasive procedure available for burned wound coverage (Fig. 3). Although skin substitutes can also be used but none was used in the present series due to financial constrains.

In the study by Maslauska et al two methods of treatment, conservative and active surgical treatments were compared. Fewer complications were seen in the active surgical treatment<sup>15</sup>. Whereas we used conservative method in 34.6% of the patients. Similarly in the



study by Kamolz et al, majority of the patients underwent rapid wound closure and 65.4% in the present series underwent surgical closure with grafts or flaps<sup>16</sup>.

Majority of these patients had satisfactory wound healing. The postoperative scarring was kept in check by the use of compression gloves and silicone gel sheet. In spite of it, 7.7% of the patients had partial graft loss, whereas only one patient developed the contracture of the first web after 10 months of the surgery, requiring a re-do surgery. The exposed flexor tendons were covered by cross finger flaps. The overall complications were only 13.5%. None had amputation of digits/s whereas in the study by Holavanahalli et al, 50% of the patients underwent amputations<sup>17</sup>. In a study carried out in US Army Institute of Surgical Research, 239 out of 453 had hand burns.<sup>18</sup>

## CONCLUSION

The burned hands should be treated promptly and efficiently in order to minimize the complications and morbidity.

## REFERENCE

- Greenhalgh DG, Vu HL. Acute management of the burned hand and electrical injuries. In: Mathes SJ, Hentz VR, editor. *Plastic Surgery*, 2<sup>nd</sup> edition, Elsevier, Philadelphia 2006:587-603.
- Salisbury RE, Dingeldein GP. The burned hand and upper extremity. In: Green DP, editor. *Operative Hand Surgery*. Churchill Livingstone, New York, 3<sup>rd</sup> edition, 1993: 2007-32.
- Luce EA. The acute and subacute management of the burned hand. *Clin Plast Surg* 2000;27:49-63.
- Tambuscio A, Governa M, Caputo G, et al. Deep burn of the hands; early surgical treatment avoids the need for late revisions? *Burns* 2006;32:1000-4.
- Ahmad M, Hussain SS, Khan MI, Malik SA. Experience of burn injuries at the Pakistan Institute of Medical Sciences, Islamabad, Pakistan. *Ann Burns Fire Disasters* 2007;XX:7-10.
- Iqbal T, Rashid R, Ibrahim M. Incidence of burn injury admission at PIMS, Islamabad. *Ann Pak Inst Med Sci* 2005;1:194-5.
- Khan N, Malik N. Presentation of burn injuries and their management outcome. *J Pak Med Assoc* 2006;56:394-7.
- Cartotto R. The burned hand: optimizing longterm outcomes with a standardized approach to acute and subacute care. *Clin Plast Surg* 2005;32:515-27.
- Barillo DJ, Paulsen SM. Management of burns of the hands. *Wounds* 2003;15:4-9.
- Zeniou A, Ionnou A, Protopapa A, Kotsakis I, Yiallourous C, Koulermou G. The policy of our clinic in early escharotomy in burns of the hand. *Ann Burns Fire Disasters* 2007;XX:20-21.
- Burd A, Noronha FV, Ahmed K, Chan JYW, Ayyapan T, Ying SY, Pand P. Decompression not escharotomy in acute burns. *Burns* 2006;32:284-92.
- Griffin PA, Leitch IO. Burns to the hand. *Aust Fam Physicians* 1995;24:166-8.
- Chien WC, Pai L, Lin CC, Chen HC. Epidemiology of hospitalized burns patients in Taiwan. *Burns* 2003;29:582-88.
- Weinand C. The vacuum assisted closure (VAC) device for hastened attachment of a superficial inferior epigastric flap to third degree burns on hand and fingers. *J Burn Care Rehabil* 2009;30:362-5.
- Maslauskas K, Rimdeika R, Rapoliene J, Saladzinskas Z, Samsanavicius D, kaikaris V. The comparison of two methods of treatment evaluating complications and deficiency of hand burns. *Medicina (Kaunas)* 2009;45:37-45.
- Kamolz LP, Kitzinger HB, Karle B, Frey M. The treatment of hand burns. *Burns* 2008
- Holavanahalli RK, Helm PA, Gorman AR, Kowalske KJ. Outcomes after deep full-thickness hand burns. *Arch Phys Med Rehabil* 2007;88(12 Suppl): S30-5.
- Hedman TL, Renz EM, Richard RL, Quick CD, Dewey WS, Barillo DS et al. Incidence and severity of combat hand burns after All Army Activity message. *J Trauma* 2008;64 (2 Suppl):S 169-72

**Table 1: Aetiology of Burns (n=52)**

Cause	Patients		%
	Male	Female	
Electric	13	2	28.8
Scald	6	7	25.0
Flame	14	6	38.5
Chemical	3	1	7.7

**Table 2: Microorganism (1<sup>st</sup> week)**

Microorganisms	Patients	%
Staphylococcus aureus	18	34.6
Streptococcus	3	5.7
MRSA	4	7.7
Pseudomonas	8	15.4
E.coli	7	13.5
Klebsiella	9	17.3
Other gram negative bacilli	7	13.5
Fungus	1	1.9
No growth	21	40.4

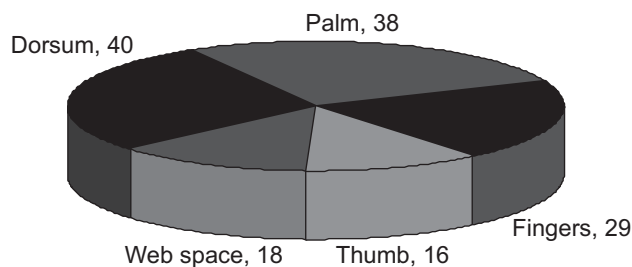
**Table: 3 Microorganism (after 1 week)**

Microorganisms	Patients	%
Staphylococcus aureus	21	40.4
Streptococcus	6	11.5
MRSA	6	11.5
Pseudomonas	19	36.5
E.coli	14	26.9
Klebsiella	11	21.2
Other gram negative bacilli	18	34.6
Fungus	1	1.9
No growth	10	19.2

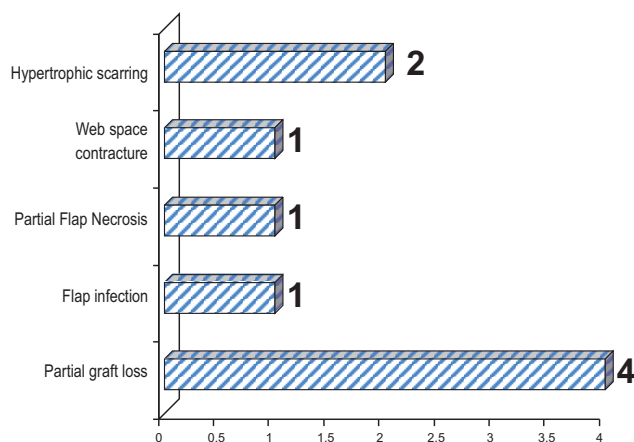
**Table 4: Procedures performed**

Procedure	Patients	%
Secondary healing	18	34.6
Skin grafting	25	48.1
Flap surgery	9	17.3

**Fig. 1: Areas burned**



**Fig.2: Complications**



**Fig.3: Pre & Post operative case (Skin grafting)**



# One Year Audit of Soft Tissue Reconstruction of Foot Defects

Dr. Omer Salahuddin, Dr. Kanwal Yousaf, Dr. Mamoon Rashid,  
Dr. Shumaila Yousaf, Dr. Uzair.A.Qazi, Dr. Saleem A Malik

## Introduction

Successful reconstruction of the severely injured foot remains a challenge for the surgeon. Healthy, well-functioning feet are necessary to perform daily activities. The unique anatomy of the foot complicates reconstruction by limiting the availability of local tissues. The simplest appropriate technique for the injured foot that is likely to produce the best outcome should be selected. Reconstructive options from the most simple to the complex include primary closure, healing by secondary intention, grafting, flaps (local and distant), microvascular reconstruction and amputation. In our experience, reconstruction of the soft tissues of the foot frequently requires more complex methods.

*Key Words: foot defects, microvascular reconstruction, amputation.*

## Patients and methods

All patients presenting to emergency department or plastic surgery clinic, Shifa International Hospital with soft tissue defects of distal leg, ankle and foot were included in the study. This prospective case series was conducted from October 2010 to October 2011. All the patients were thoroughly assessed for lower limb function, vascular status and availability of local donor tissue.

## Results

A total of 29 patients including 25 males and 4 females were included in the study. Ankle joint was exposed in 5 patients, dorsum of foot in 4, heel in 10 patients and degloving injury of more than half of the foot was found in 3 patients. 1 patient had transmetatarsal amputation while another lady had chopart's amputation stump. Healing by secondary intention was main stay of treatment in one patient. Partial thickness skin graft was done in 7 patients. Local flaps including reverse dorsalis pedis artery flap was used in one patient, adiposofacial flap in one patient, fillet

flap in one patients and reverse sural artery based flap was used in 10 patients. Microvascular reconstruction was used in 7 patients. Latissimus dorsi flap with partial thickness skin grafts was used in 5 patients while ALTF was done in 2 patients for resurfacing of ankle and dorsum of foot skin.

## Conclusion

Reconstruction of soft tissue defects of ankle and foot have always been a reconstructive challenge. Several small fasciocutaneous and sometimes innervated flaps from the local tissues are available for reconstruction of defects of limited size. The results suggest that there are several effective alternatives for coverage of soft tissue defects of the ankle and foot.

## Introduction

The human foot is designed to support and propel the body's weight in the upright position. Common soft tissue problems that afflict the ankle and feet are as a result of trauma, infection, ischaemia and following excisional surgery for tumors. The unique anatomy of the foot complicates reconstruction by limiting the availability of local tissues. Complex foot trauma can compromise this fine functional balance at all these levels and produce great deformity [1,2]. Better understanding of hindfoot, midfoot and forefoot anatomy and interactions as well as advances in surgical techniques have improved the functional output.

## Dr. Mamoon Rashid

Department of Plastic Surgery, Shifa International  
Hospital, Islamabad, Pakistan

Correspondence: Dr.mamoon Rashid Consulant plastic  
surgeon.

Phone: 0301-5599908

Email [ltcolmamoon@yahoo.com](mailto:ltcolmamoon@yahoo.com)

The development of microsurgery in the 1970s considerably improved the outcome of soft-tissue defect.<sup>3</sup> In the 1980s, loco-regional pedicled flaps began to develop with many possibilities such as musculocutaneous, adiposofacial<sup>4</sup> and fasciocutaneous flaps.<sup>5,6</sup> These flaps were even more available as a result of using the reverse blood supply concept. 7-9 The use of locoregional pedicle flaps is highly dependent on the location of injury, extent, vascular status and comorbid conditions such as Diabetes Mellitus. When extent of trauma is more and local flaps are not available free tissue transfer is required for adequate soft tissue cover.

The aim of this study to present our experience of management of soft tissue defects of 29 cases over a one year period. Different reconstructive options were utilised tailored to patient's age, defect size and extent of injury.

**Materials and methods**

All patients presenting to emergency department or plastic surgery outpatient department department shifa international hospital with soft tissue defects of distal leg, ankle and foot were included in the study. All the patients were thoroughly assessed for lower limb function, vascular status and availability of local donor tissue. X-ray, CT-scan and MRI were performed where necessary for bony and soft tissue. This prospective case series was conducted from October 2010 to October 2011. The age and sex of each patient, cause and site of defect, dimension of flap, postoperative results and complications were recorded.

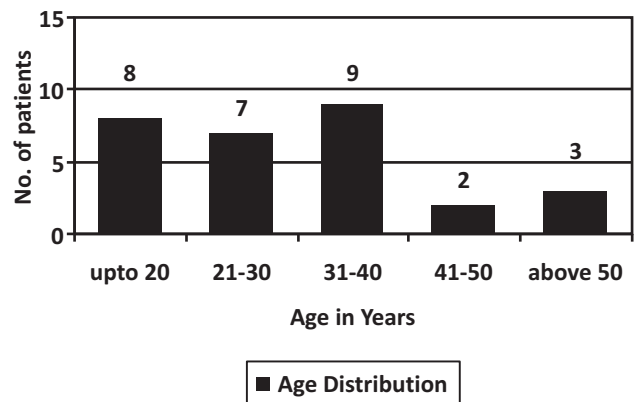
**Results**

A total of 29 patients including 25 males and 4 females were included in the study. Age range was 9 to 63 years. Age distribution of patients is shown in Fig 1. Etiology of defects is shown in Fig II. Ankle joint was exposed in 5 patients, dorsum of foot in 7, heel in 10 patients and degloving injury of more than half of the foot was found in 3 patients. 1 patient had transmetatarsal amputation while another lady had chopart's amputation stump. Soft tissue defects of different areas of foot in percentages are shown in FigIII. Table I shows size of the

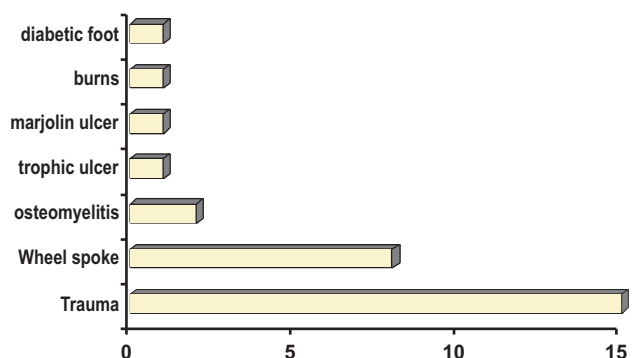
defect.

We used vaccum dressing (VAC) in wounds with exposed bones, tendons and the ones which were grossly contaminated. VAC was applied after debridement and removal of necrotic material. Dressings were changed after 72 hours and continued till the wound was clean with formation of granulation tissue.

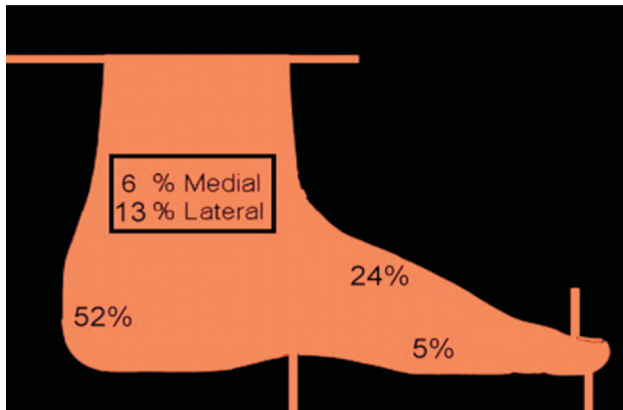
Healing by secondary intention was main stay of treatment in one patient. Partial thickness skin graft was done in 7 patients. Local flaps including reverse dorsalis pedis artery flap was used in one patient, peroneal artery based fasciocutaneous flap in 2 patients, adiposofacial flap in 1 patient and reverse sural artery based flap was used in 10 patients. Microvascular reconstruction was used in 5 patients. Latissimus dorsi flap was used in 5 patients while ALTF was done in 2 patient for resurfacing of ankle and dorsum of foot skin. Different types of procedures performed in soft tissue defects of different sizes are shown in Fig. IV. All flaps survived well. 2 sural artery flaps were delayed. 2 patients developed wound infection but responded well to systemic antibiotics.



**Fig. I age distribution of the patients**



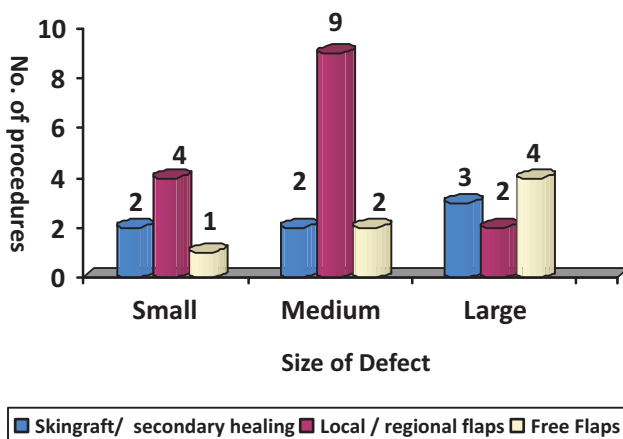
**Fig. II Etiology of foot defects**



**Fig III. Percentage of Soft tissue defects by area**

Size	Cm <sup>2</sup>	No. of patients	Percentage
Small	>4 and ≤20	7	24%
Medium	>20 and ≤50	13	45%
Large	>50	9	31%
<b>TOTAL</b>		<b>29</b>	<b>100%</b>

**Table I Area of defect in cm<sup>2</sup>**



**Fig. IV Types of procedures according to size of defect**

**Discussion**

Soft tissue defects of the ankle and foot used to be enigma of reconstructive surgeons. Trauma due to road traffic accidents, tumors, diabetes mellitus and peripheral vascular disease

are the major etiological factors. Various techniques have been developed for reconstruction of these defects. Many factors have always influenced the indications for a procedure like technical skills, wound size and location as well as the exposed tissues but the choice has changed with time.

In cases of trauma, crush injury and road traffic accidents wounds are sometimes grossly contaminated. Initial management therefore involves thorough debridement, removal of all dirt, Greece etc.,stabilization of skeletal framework. For better wound management exudation and infection control is essential. Many studies have shown that Negative pressure wound therapy plays a major role in wound management by elimination of hematomas, exudates and possible pathogens.<sup>10-13</sup> We also used VAC dressing after initial debridement and before definitive closure in 10 patients.

Split skin graft remains the best option to cover superficial soft tissue defects on the dorsum of foot. However, occasional graft breakdown continues to be a problem. Soft tissue loss on the non weight bearing area of the foot and around the ankle is reconstructive challenge (14–19) because the exposed tendons, ligaments, and bone need to be covered by flaps.

There are many options, such as pedicled fasciocutaneous flaps 5,6, adiposofacial flaps4 and free flaps. Reversed island flaps such as the peroneal artery flap, anterior tibial artery flap and posterior tibial artery flap can be used but sacrificing a major artery constitutes a potentially serious disadvantage. Skin over the sole, especially the weight bearing portion requires reconstruction by like tissues. The distally based sural neurocutaneous flap is ideal to cover skin defect over the foot and ankle<sup>6,9,15,18</sup>. The skin quality matches the foot and ankle. It can cover a skin defect of any size, and its execution is easy, which is especially important in emergency cases. Another option of reconstruction of distal third leg, ankle and dorsum is fasciocutaneous flaps based on peroneal artery. These are septocutaneous flaps distributed along the lateral side of leg and are considered a good source of harvesting perforator flaps.20-23. Another useful

## Conclusion

Reconstruction of soft tissue defects of ankle and foot have always been a reconstructive challenge. Several small fasciocutaneous and sometimes innervated flaps from the local tissues are available for reconstruction of defects of limited size. They are safe, reliable and provide an aesthetic outcome with high patient satisfaction. When defect is large free flap offer best soft tissue coverage in a single stage.

## References

- Jurkovich G, Mock C., MacKenzie E, Burgess A, Cushing B., deLateur B, McAndrew M, Morris J, Swiontkowski M, The Sickness Impact Profile as a tool to evaluate functional outcome in trauma patients, *J. Trauma*39(4)(1995)625–631.
- Turchin DC., Schemitsch E.H., McKee M.D., Waddell J.P., Do foot injuries significantly affect functional outcome of multiply injured patients?, *J. Orthop. Trauma*13(1)(1999)1–4.
- Taylor GI, Daniel RK. The free flap: composite tissue transfer by vascular anastomosis. *Aust N Z J Surg* 1973;43(1):1-3.
- Suliman MT. Distally based adiposofacial flaps for dorsal foot and ankle soft tissue defects. *The Journal of Foot & Ankle Surgery* 2007; 46(6):464–469.
- Ponten B. The fasciocutaneous flap: its use in soft tissue defects of the lower leg. *Br J Plast Surg* 1981;34(2):215-20.
- Akhter S, Hameed A. Versatility of the sural fasciocutaneous flap in the coverage of lower third leg and hind foot defects. *Journal of Plastic, Reconstructive and Aesthetic Surgery* 2006; 59: 839-45.
- Landra AP. Q.E.D. flaps: three useful axial pattern flaps in tropical African surgery. *Br J Plast Surg* 1984;37(4):580-3.
- Yoshimura M, Imura S, Shimamura K, et al. Peroneal flap for reconstruction in the extremity: preliminary report. *Plast Reconstr Surg* 1984;74(3):402-9.
- Masquelet AC, Romana C, Beveridge J. The external supramalleolar flap. *Chirurgie* 1987;113(3):232-6.
- Kanakaris NK, Thanasis C, Keramaris N, Kontakis G, Granick MS, Giannoudis PV (2007) The efficacy of negative pressure wound therapy in the management of lower extremity trauma: review of clinical evidence. *Injury* 38(S5): S9–18.
- Jeffery SLA Advanced wound therapies in the management of severe military lower limb trauma: a new perspective. *Eplasty* 2009; 9: e28.
- Wongwarawat MD, Schnall SB, Holtom PD, Moon C, Schiller F: Negative pressure dressings as an alternative technique for the treatment of infected wounds. *Clin Orthop* 2003, 414:45-48.
- Herscovici D Jr, Sanders RW, Scaduto JM, Infante A, DiPasquale T: Vacuum-assisted wound closure (VAC therapy) for the management of patients with high-energy soft tissue injuries. *J Orthop Trauma* 2003, 17:683-88.
- Chen SL, Chen TM, Chou TD, Chen SG, Wang HJ. The distally based lesser saphenous venofasciocutaneous flap for ankle and heel reconstruction. *Plastic Reconstr Surg.* 2002 110:1664–1672.
- Atiyah BS, Al-Amm CA, El Musa KA, Sawwaf AW, Musharafieh RS. Distally based sural fasciocutaneous cross-leg flap: a new application of an old procedure. *Plastic Reconstr Surg* 2003;111:1470–1474.
- Lee YH, Rah SK, Choi SJ, Chung MS, Baek GH. Distally based lateral supramalleolar adipofascial flap for reconstruction of the dorsum of the foot and ankle. *Plast Reconstr Surg* 2004;1146:1478–1485.
- Lee S, Estela CM, Burd A. The lateral distally based adipofascial flap of the lower limb. *Br J Plast Surg* 2001;54:303–309.
- Fourn BL, Gaye N, Pannier M. Distally based sural fasciomuscular flap: anatomic study and application for filling leg or foot defects. *Plastic Reconstr Surg.*2001;107:67–72.
- Touam C, Rostoucher P, Bhatia A, Oberlin C. Comparative study of two series of distally based fasciocutaneous flaps for coverage of lower one-fourth of the leg, the ankle, and the foot. *Plastic Reconstr Surg* 2001;107:383–392.
- Chen YL, Zheng BG, Zhu JM, et al. Microsurgical anatomy of the lateral skin flap of the leg. *Ann Plast Surg* 1985;15:313-8.
- Schaverien M, Saint-Cyr M. Perforators of the lower leg: analysis of perforator locations and

- clinical application for pedicled perforator flaps. *Plast Reconstr Surg* 2008;122:161-70.
22. Ozalp T, Masquelet AC, Begue TC. Septocutaneous perforators of the peroneal artery relative to the fibula: anatomical basis of the use of pedicled fasciocutaneous flap. *Surg Radiol Anat* 2006;28:54-8.
  23. Heitmann C, Khan FN, Levin LS. Vasculature of the peroneal artery: an anatomic study focused on the perforator vessels. *J Reconstr Microsurg* 2003;19:157-62.
  24. Pallua N, Di Benedetto G, Berger A. Forefoot reconstruction by reversed island flaps in diabetic patients. *Plast Reconstr Surg* 2000;106:823-7.
  25. Wang X, Qiao Q, Burd A, et al. Reconstruction of distal foot wounds with reverse first dorsal metatarsal artery flap. *Burns* 2005;31:1025-8.
  26. Cheng MH, Ulusal BG, Wei FC. Reverse first dorsal metatarsal artery flap for reconstruction of traumatic defects of dorsal great toe. *J Trauma* 2006;60:1138-41.
  27. Pinsolle V, Reau AF, Pellissier P, Martin D, Baudet J. Soft-tissue reconstruction of the distal lower leg and foot: are free flap the only choice? Review of 215 cases. *J Plast Reconstr Aesthet Surg* 2006;59:912-7.
  28. Wettstein R, Schurch R, Banic A, Erni D, Harder Y. Review of 197 consecutive free flap reconstructions in the lower extremity. *J Plast Reconstr Aesthet Surg*. 2008;61:772-776.
  29. Ulucay GE, Yildirim S, Aydogdu E, Akoz T. Reconstruction of crush injuries of the foot dorsum: is the latissimus dorsi muscle flap a reliable choice? *J Reconstr Microsurg*. 2006; 22:157-166.
  30. Korompilias AV, Lykissas MG, Vekris MD, Beris AE, Soucacos PN. Microsurgery for lower extremity injuries. *Injury*. 2008;39(Suppl 3):S103-108.
  31. Kim JT, Koo BS, Kim SK. The thin latissimus dorsi perforator-based free flap for resurfacing. *Plast Reconstr Surg*. 2001; 107(2): 374-82.
  32. Karsidag S, AKCAL A, Turgut G, Ugurlu K, Bas L. Lower extremity soft tissue reconstruction with free flap based on subscapular artery. *Acta Orthop Traumatol Turc* 2011; 45 (2): 100-108.
  33. Hashmi PM. An experience with free scapular flap for reconstruction of lower extremity defects at Aga Khan University Hospital Karachi; *J Ayub Med Coll Abbottabad*. 2004 16(1): 54-7.
  34. Khan MA, Jose RM, Taylor C, Ahmed W, Prinsloo D. Free radial forearm fasciocutaneous flap in the treatment of distal third tibial osteomyelitis; *Ann Plast Surg*. 2012; 68(1): 58-61.
  35. Huang D, Wang HW, Wang HG, Wu WZ, Zhao CY. Reconstruction of soft tissue defect of the extremity with the perforator flap from inguinal region. *Chin Med J (Engl.)*. 2009 122(23): 2861-4
  36. Bannasch H, Strohm PC, Al Awadi K, Stark GB, Momeni A. Technical refinements of composite thoracodorsal system free flaps for 1-stage lower extremity reconstruction resulting in reduced donor-site morbidity. *Ann Plast Surg*. 2008;60(4):386-90.
  37. Nasajpour H, Steele MH. Anterolateral thigh free flap for "head-to-toe" reconstruction. *Ann Plast Surg*. 2011;66(5):530-3.
  38. Huang K, Zhang XW, Shen LF, Guo QF, Zhang C. Reconstruction of complex ankle joint defects using a composite free anterolateral thigh musculocutaneous flap with vascularized fascia lata: a 20-year follow-up. *Plast Reconstr Surg*. 2011;127(3):83e-85e.



## Fodder Cutter (Toka) Injuries, a Preventable Tragedy. Our Experience at Jinnah Hospital Lahore

Dr. Muhammad Jibran Rabbani, Dr. Ata Ul Haq, Dr. Farrukh Aslam,  
Dr. Husnain Khan, Dr. Moazzam Nazeer Tarar.

---

### ABSTRACT

The fodder cutter machine (*Toka* in local dialect) is one of the most common agricultural machines used in the farms. We receive quite a significant number of agriculture machine injuries at the Jinnah Hospital Lahore and Toka injuries are at the top of list. Although any part of the body may be injured but upper limb is the most commonly injured region. We conducted a study to see the spectrum of Toka related injuries referred to our department and their management. Study included the patients referred to plastic surgery department with Toka injuries from Jan 2009 to Oct 2012. We received 74 patients over the period of 34 months. We found that most commonly involved age group was 4 yrs to 45 yrs. Hand injuries are at the top of list followed by scalp degloving. Out of these 47 patients required microsurgical intervention. Majority of the microsurgical work was replantation.

*Key words: Fodder cutter machine, agricultural injuries, hand injuries, replantation.*

### INTRODUCTION

Pakistan is an agricultural country and Lahore is the second largest city of Pakistan with vast agricultural lands in its periphery. Most people use powered agricultural machinery in their fields to expedite their work but a majority do not practice safety measures either due to lack of knowledge or due to willful neglect<sup>1</sup>. Fodder cutter machines (Toka) are used every day by the farmers and their families for the preparation of fodder for their livestock<sup>2</sup>. There are two broad categories of Toka machines, manual and electric motor driven. Injuries are more common and more severe with electric motor driven machines<sup>3</sup>. The mechanization of agricultural practices has resulted in increased agricultural productivity in Pakistan but at expense of higher incidence of traumatic injuries among agricultural workers. Toka injuries are emerging as a leading cause of morbidity in agricultural workers. It affects both genders of all age groups with male predominance<sup>4</sup>. Most of these injuries are in the form of complete amputation of either digits or the hand and their management requires micro vascular services. Management of such patients

poses a burden on our already stressed health care delivery system<sup>5</sup>. Majority of these untreated injuries end up in the compromised upper limb function leading to lifelong disability<sup>6,7,8</sup>.

After starting micro vascular/replantation service at the emergency department of Jinnah Hospital Lahore, we realized the magnitude of problem and decided to conduct a study to collect data and awareness of this issue at national level. Because we strongly believe that prevention of such injuries is the only way forward.

### MATERIAL AND METHODS

We conducted the study in Plastic Surgery Department of Jinnah Hospital, Lahore from Jan 2009 to Oct 2012. All patients referred to plastic surgery through emergency department with Toka injuries were included in the study. The patients who sustained injuries due to other agricultural machine injuries were excluded. All the injuries were recorded with respect to the age and sex of the patients, site and severity of injury. All the patients were managed in emergency department. Patients having multiple injuries were managed by adapting multidisciplinary approach. All the replantations and revascularizations were done in emergency department and were shifted to indoor service. After discharge, patients were followed in outpatient department for rehabilitation. All the data was recorded on a Performa and data was analyzed by using SPSS v17.

### Dr. Ata Ul Haq

Senior Registrar  
Department of Plastic Surgery,  
Allama Iqbal Medical College/Jinnah Hospital,  
Lahore  
Phone: - 03215847076  
Email: ata\_mr@yahoo.com



**RESULTS**

We received calls for 74 patients for Toka injuries during the above mentioned time period. Out of these 49 (66.2%) were male and 25 (33.7%) were female. Age ranged from 4 yrs to 45 yrs. Mean age was 25yrs. Seven (9.45%) patients were below the age of 6 yrs. Total 53 (71.6%) patients sustained injuries to the upper limb, 14 (18.91%) to scalp, 5 (6.75%) to genital area and 2 (2.7%) patients to lower limb.

Among the hand injuries 42 (79.24%) were male and 11 (20.75%) were female patients. 6 (11.32%) patients were below the age of 4 years. Most of the injuries were to the digits 21 (39.62%) followed by palm 13 (24.5%), distal forearm 12 (22.64%), proximal forearm 4 (7.54%) and mid arm 3 (5.66%). Ten (18.9%) patients were not offered replantation due to late presentation, multilevel injuries or element of avulsion. These patients underwent stump formation or wound closure by fasciocutaneous flap. Rest of 37 (69.9%) patients were managed by replantation and 6 (11.32%) were offered revascularization. Out of 37 replantations, 28 (75.6%) were successful. All the revascularized hands/digits survived.

Fourteen (18.91%) patients sustained scalp avulsion injuries due to entrapment of long hairs in machine belt leading to partial or total scalp avulsion. All patients were females. One (7.12%) patient was offered revascularization that was successful. All other patients were not offered replantation as there was late presentation or sever avulsion. Soft tissue reconstruction was done by split thickness skin graft in 9 (64.29%) patients and by free tissue transfer in 4(28.57%) patients.

Five male patients sustained injuries to genital area resulting in penile and scrotal skin degloving due to entrapment of cloths in machine belt. One (20%) patient got concomitant injury to penile urethra that was repaired by urology department. All 5 patients underwent soft tissue reconstruction by split thickness skin graft.

Lower limb amputation was seen in 2 (2.7%) patients. The adult patient had unilateral amputation just proximal to ankle. The other patient was below age to 7 years got bilateral amputation proximal to ankle. Both patients were offered replantation. There was complete

survival of replanted foot in unilateral amputation patient. While in case of bilateral replantation, the left foot completely survived but the right foot ended up with midtarsal amputation.

**TABLES AND FIGURES**

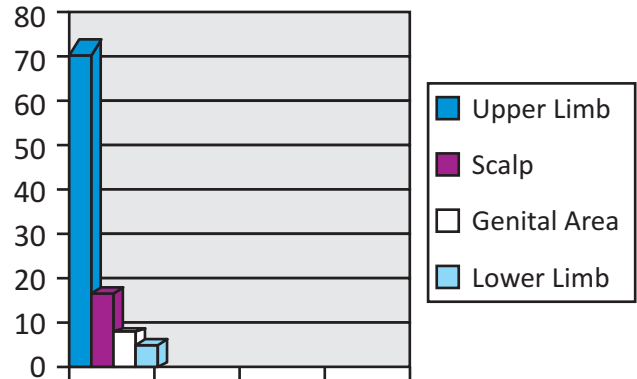


Figure - Spectrum of Injuries

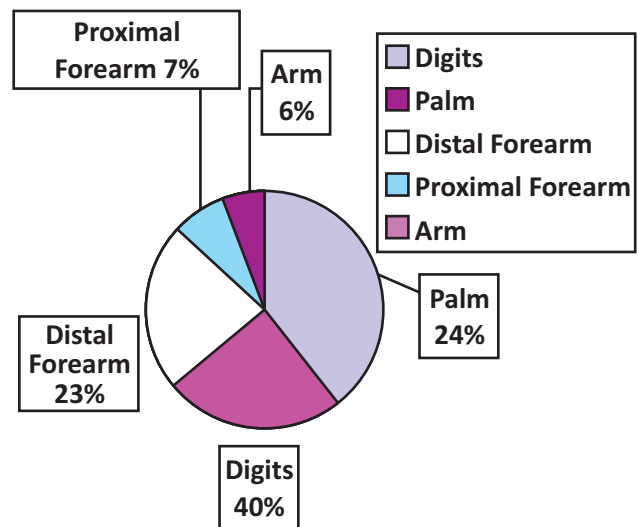


Figure : Spectrum of Hand Injuries

	Total	Survival
Stump Formation	10	-
Replantation	37	75.6%
Revascularization	6	100%

Figure : Management of Upper Limb Injuries

Management of Scalp Degloving Injuries	
Total patients	14
Revascularization	1
SSG	9
Free Flap	4

Figure : Management of Scalp Degloving Injuries



5(a)



5(b)

Figure 5: Electric motor driven Fodder Machine

**Case 1:**

18 year male, right dominant hand, laborer by occupation presented primarily to Jinnah Hospital Lahore with toka machine injury causing amputation of right thumb through mid-metacarpal level. Successful replantation was done in emergency.



(a)



(b)



(c)



(d)

Figure . Case 1- Rt thumb amputation.

**Case 2:**

5 years female presented with accidental fodder machine injury to her left hand while playing with electric motor driven fodder machine. Little and ring fingers were avascular at presentation. Both fingers survived after revascularization.



(a)



(b)

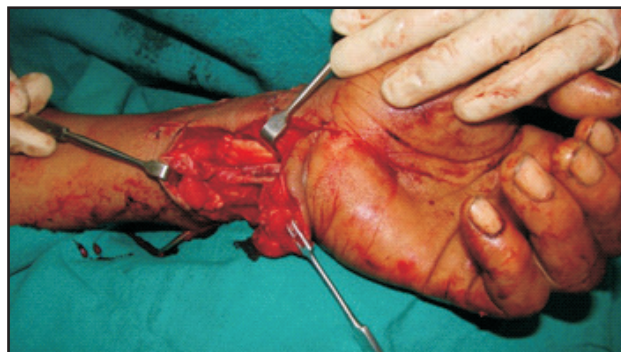
**Figure : Case 2- Partial injury involving little and ring finger. Both fingers survived after revascularization**

**Case 3:**

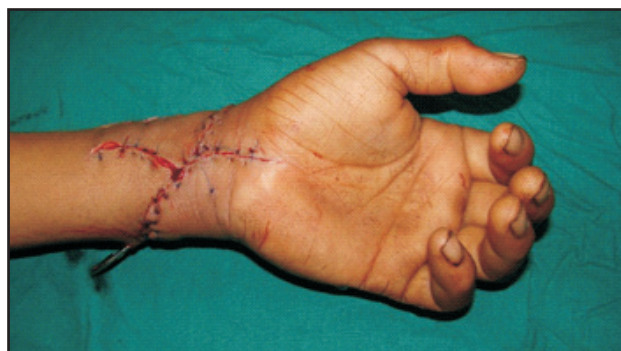
37 years male farmer presented with amputation of his left hand through wrist after sustaining injury from fodder cutter. After successful replantation, post operative results were satisfactory



(a)



(b)



(c)



(d)

**Figure : Case 3- Replantation of left hand**

**Case 4:**

41 years old female presented with scalp degloving after entrapment if her hairs in fodder machine belt. The only remaining blood supply was from left superficial temporal artery but there was no venous return. Revascularization was done by repairing two veins using vein grafts.



(a)



(d)

Figure :- Scalp Revascularization



(b)

**Case 5:**

29 years male sustained injury by accidental turning on of toka machine causing amputation of his right foot just proximal to ankle mortise. Results were satisfactory after replantation.



(a)



(c)



(b)



(c)



(d)

**Figure : Right foot replantation**

## DISCUSSION

Toka injuries are devastating, often resulting in long term disability. Presentation of such injuries can range from degloving to partial or complete amputation. Surgery often involves more than one procedure and complexity of the procedure requires highly specialized skills of microsurgical reconstruction.

The incidence and severity of such injuries has been suggested by previous studies as well. Akram M et al studied the incidence of agriculture machine injuries and found that 67.5% injuries were due to Fodder cutter machine (Toka). They also found that 90% of hand injuries were due to Toka<sup>9</sup>. These facts support our findings that majority of Toka machine injuries involve the upper limb, especially the hand. According to Annual Report of CIWCE & IRI, Lahore, Pakistan during the survey of just two villages of Punjab Pakistan they found five

people with severe injuries to upper limb due to Toka machine. Out of these five people two had amputation at arm level and three had amputation of digits<sup>10</sup>. Although area visited is very small but still it highlights the fact that lot of people are suffering due to this machine.

According to a paper prepared for Global Agriculture Safety Forum by Dr Amitava Mukherjee & Prof. Chang Ping, the agricultural mechanization is still in infancy in most of the Asian countries<sup>11</sup>. According to same report the implementation of farm machinery standards is on voluntary basis. Obviously this leads to manufacturing of agricultural machinery without proper consideration for the safety of the operator leading to accidental injuries. Same is true for Toka machine. Low level of literacy makes training and awareness about farm equipment safety a different task in our circumstances.

The main purpose of our study was to know the spectrum of Toka machine injuries so that we can highlight this issue on various forums on the basis of facts & figures. As shown by our study, most of the injuries are severe and disabling. The age group involved is from the most productive part of the society and bread earners for their families. Many of the injuries lead to lifelong disability leading to endless problem of a person and his family.

Most of these injuries require plastic surgery intervention with availability of microsurgical skills. Presently these services are not available even in most tertiary care hospitals of Pakistan. On top of that, victims of these injuries belong to far flung areas, further reducing their chances of getting timely plastic surgery intervention i.e. long warm ischemia times in case of amputation. This reduces the chances of better functional outcome.

On the basis of above mentioned facts we strongly believe that prevention of these injuries is the only solution. It can be achieved by proper designing of fodder cutting machine along with education of the operator about his safety during the use of this machine. By simply reducing the exposure of pinch and cutting part of the machine with the help of "safe guards" and "shields" can reduce the incidence of injuries. Also laws should

be formulated and implemented for the manufacturing of safer Toka machines.

The limitation of our study is that this is a single unit data with inclusion of only those patients who were referred to us for complex reconstruction. Patients with minor injuries were treated and discharged by the general or orthopedic unit on call. In order to frame the magnitude of problem a multicentre study is required with inclusion of every patient presenting to emergency department with agricultural machine injuries.

## CONCLUSION

Injury caused by Toka is a serious but preventable health hazard faced by our rural population. These injuries can be prevented by modification in machine design and education of population at risk about the safe use of this machine. Regulatory control over manufacturing of such machine with emphasis on safety features is warranted to prevent such devastating injuries.

## REFERENCES

- 1- Childhood agricultural injuries prevention symposium held in Marshfield, Wisconsin in 1992. Childhood agricultural injuries surveillance.
- 2- RFA-OH-00-005. Research to strengthen occupational safety and health surveillance, title, childhood agricultural trauma evaluation system, Debora Boyle, Oh.D (09/30/2000 To 09/29/2001).

- 3- Salmi LR, Weiss HB, Peterson PL, Spenger FR, Sattin RW, Anderson HA. Fatal farm injuries among young children. *Pediatrics* 1989;83:267-71.
- 4- Bureau of Labor Statistics, census of fatal occupation injuries, United States, National central for health statistics vital statistics mortality surveillance systems.
- 5- Global medium term programme. Accident prevention. Geneva, World Health organization 1988.
- 6- Horsburgh S, Feyer AM, Langley JD. Fatal work related injuries in agricultural production and services to agriculture sectors of NewZealand, 1985–94. *Occup Environ Med* 2001; 58: 489–495.
- 7- Franklin RC, Mitchell RJ, Driscoll TR, Fragar LJ. Agricultural work-related fatalities in Australia, 1989–1992. *J Agric Safety Health* 2001; 7: 213–227.
- 8- Singleton WT, Hicks C, Hirsch A, 1981. Safety in Agriculture and Related Industries (AP Report 106). University of Aston in Birmingham, Birmingham.
- 9- Akram M, Gulzar MR, Nazim M, Iqbal J. Agricultural machine injuries; Incidence. *Professional Med J*. Mar 2010; 17(1): 485-488.
- 10- Annual Report of Activities 2011. Centre for the Improvement of Working Conditions & Environment Lahore. Industrial Relations Institute Lahore.
- 11- Amitava M, Chang P. Agricultural Machinery Safety – a Perpetual Theme of Human Society. The Global Agricultural Safety (GAS) Form. Rome Italy. 25 September 2008.



# Study of Cases of Tattoos with Regard to Surgical Treatment

Dr. Mohammad Ashraf Ganatra,  
Dr. Sikander Bhura

**SUMMARY. OBJECTIVE:** To study cases of patients coming for surgical removal of their tattoos with regard to treatment outcome.

**DESIGN:** A descriptive and observational study.

**PLACE & DURATION OF STUDY:** This study was conducted at Plastic Surgery Department of Dow Medical College & Civil Hospital, Karachi over a period of one year.

**SUBJECTS & METHODS:** Twenty four patients, 18 male and 6 female, who came for tattoo removal and were found to be psychologically fit, were included in the study. After explaining the treatment consequences they were subjected to either simple excision, serial excision, Dermabrasion or excision and skin grafting.

**RESULTS:** Fourteen cases underwent serial excision, four case simple excision and closure, three cases dermabrasion and three cases excision and over grafting. Infection occurred in one case, dehiscence in one case and incomplete removal of tattoo by dermabrasion in one case. Five cases developed hypertrophic scars. Patients were followed up in out patient service for up to six months. Out of 24 patients only eight cases were available for follow up at the end of six months. Out of these eight, five developed hypertrophic scars.

**CONCLUSION:** Though tattoo removal is a simple procedure in the hands of experienced plastic surgeon, it is not free from complications. Though scar is inevitable, patient's satisfaction was quite high as they got rid of stigmas, which was haunting

**Keywords:** Tattoos, surgical removal

## Introduction

Tattoo is a foreign material entered into the dermis by needle or some other trauma that results in a visible, indelible mark in the skin. Tattoo marking is a favourite and passionate practice or hobby of youngsters, both males and females, in the city of Karachi. Most of the youngsters belong to age group of 16-22 years when there is either emotional or personal instability. There is strong desire to be identified with someone or to belong to someone. Most of these tattoos have names of their beloved or some marks of heart or cupid bows or simple alphabet letters of their loved ones. It is usually in the mid and late twenties that the individual finds the tattoo a liability. It is at this point that social, religious and familial pressures relative to the tattoo became apparent to the individual and removal of tattoo is sought from plastic surgeon.

## Mohammad Ashraf Ganatra MBBS, MS(Plast Surg)

Assistant Professor

Sikander Bhura FCPS Senior Medical Officer  
Department of Plastic Surgery, Dow Medical  
College & Civil Hospital, Karachi

Correspondence to Dr Mohammad Ashraf Ganatra  
C-18 Al-Rehman apartment Block 16, Gulshan  
Iqbal, Karachi 75300

Ph: 4992639 Mobile: 0300 8222524

E-mail: ganatra@cyber.net.pk

Often such individuals have attempted to remove a portion of the tattoo themselves by burning the area with a hot object or acid or abrading the area with salt or sandpaper, only to find it painful and the scarring that results as objectionable as the tattoo.

A study of all cases of tattoos coming to out patient plastic surgery service of Civil Hospital, Karachi for its removal was carried out.

## Methodology

All patients coming to outpatient's department of plastic surgery service at Civil Hospital Karachi for removal of tattoo were included in the study. A detailed interview by the first author excluded all those cases that were showing signs of emotional instability. All patients were explained of consequences of treatment outcome and patients with strong desire and motivation were included.

Tattoos were examined with regard to age of patient, site of tattoo, duration of tattoo, matter of the tattoo, whether done by professional or non-professional and type of ink used.

Tattoos were studied with regard to treatment methods they were subjected, i.e. simple excision and closure, serial excision, excision and skin grafting, dermabrasion and any other method. Follow up was done for six

months. Quality of scar and any other complications were noted.

**Simple Excision:** The tattoo was marked with gentian violet as an ellipse, observing the lines of relaxed skin tension. 2% Injection lidocaine (InjXylocaine – Wellcome) was infiltrated into and around tattoo. It was excised with No.15 surgical blade. Skin was closed in two layers. Subcuticular layer was closed with 3/0 polygalactic acid (Vicryl Ethicon) and dermal / epidermal layer with 5/0 polypropylene (Prolene - Ethicon). Sutures were removed on 5th post operative day and patient was advised to apply adhesive tape (Steri Strip- 3M) for a period of three weeks in order to prevent the spreading of scar.

#### **Serial excision:**

It was used for larger tattoos. In this method only a part of tattoo was removed at one stage and closed as above. The remaining part of the tattoo was removed after three months. In this way the entire tattoo was removed in two to four surgical sessions.

#### **Excision skin grafting:**

It was used for large tattoos. Skin graft usually applied was of intermediate thickness and was obtained from thigh. All cases were done under general anesthesia.

**Dermabrasion** Dermabrator is a machine which removes the epidermis and a superficial layer of dermis.

**Miscellaneous** This consist of laser treatment, electric cautery, chemical removal and salabrasion.

#### **Results**

From 1st January 2000 to 31st December 2000 twenty four cases of tattoos were studied. Eighteen were males and six females. Age vary from 16 years to 40 years.

#### **Site:**

Twelve were on the forearm and six were on the dorsum of non dominant hand, three were on the upper arm, one on the thigh, one on the

neck, and one on the chest.

**Duration.** Out of 24 tattoos studied, 12 were of less than 5 years old, 9 were less than three years old and 3 were less than one year old.

#### **Type of Tattoo:**

Out of 24 tattoos two were done by professional and 22 were by non professional. Out of 22 five were self inflicted.

#### **Matter of Tattoo:**

Five cases were having alphabet or letters (Figure 1), six were having heart or heart like structures, eight were having names, three were having dots and lines and two were having different shapes such like dragon & Cupid's bow. Ink used: All the cases were done by black ink. Treatment employed: Fourteen cases underwent serial excision, four cases simple excision and closure (Figure 2 & 3), three cases dermabrasion and three cases excision and over grafting.

#### **Complications:**

Infection occurred in one case, dehiscence in one case and incomplete removal of tattoo by dermabrasion in one case. Five cases develop hypertrophic scars.

#### **Follow up:**

Patients were followed up in out patient for up to six months. At the end of three months, only 16 out of 24 remained in the follow up. Scar in eight cases was acceptable to patients. Eight cases, in which there some complication, were visiting at the end of six months. Out of this eight, five developed hypertrophic scars. Three were treated by intralesional injection triamcinolone, one by silicone sheeting (Cica Care - Smith & Nephew) and one by combination of both.

#### **Discussion Tattoo can be of three types:**

**Adventitious** when pigment enters dermis accidentally. **Medical** This involves the insertion of pigment by a surgeon e.g. for reconstruction of nipple areola complex.



**Decorative** This is a planned impregnation of pigment into skin to create an artistic design or pattern, it can be professional or non professional. Professional tattoos are those, which are placed by artist. They have got regular outline, are well demarcated and pigment is uniformly distributed up to a certain depth. Non-professional (amateur) tattoos tend to have outline form only. Outline is often irregular and thick. Pigment is not uniformly distributed. Designs are rather simple and they usually placed on the distal portion of the extremity.

Several factors influence the outcome when treating tattoos. These include the patient's skin type, the color and age of tattoo, and whether tattoo is professional or amateur.

In our series all the tattoos were decorative. Out of twenty four, twenty two were done by non-professional. Most of the patients at the time of tattoo removal were found to be in normal emotional and psychological state and therefore were not subjected to any psychiatric counseling. Nineteen patients sought removal due to social liabilities and five due to religious reasons. Majority of patients had tattoo in the shape of names on the forearm most probably due to ease of application. They were done by non-professional, were covering more area and thus need serial excision for removal.

Modern day methods of tattoo removal by different lasers were not used in our series as they are expensive and are not available in our institute. Currently, the Q-switched ruby, Nd:Yag, alexandrite, and green pulsed dye lasers are employed in tattoo removal. Each laser enables removal of specific colors of ink, however, no one of these can remove all ink.

## CONCLUSION

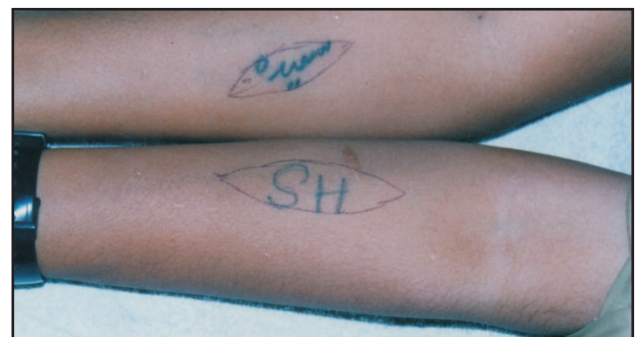
Though tattoo removal is a simple procedure in the hands of experienced plastic surgeon, it is not free from complications. Scar is inevitable but patient's satisfaction is quite high as they get rid of stigmas, which usually haunts them.

## References

1. McGregor IA, McGregor AD. Wound management. *Fundamental techniques of Plastic*

*Surgery*, Ninth edition. Churchill Livingstone, New York, 1995, p13.

2. Popkin GL. Tumors of the skin; a dermatologist's viewpoint. *Plastic Surgery: McCarthy (ed.)*. London: W Saunders Company. 1990, p3608.
3. Goldstein N, Epstein B, Epstein Jr. Tattoos: Cosmetic and therapeutic tattooing and removal techniques. *Skin Surgery (6th Edition)*. Philadelphia: W.B. Saunders Company. 1987, p619.
4. Agris J. Tattoos. *Plastic Surgery*, Grabb WC, Smith JW, Boston: Little Brown & Co. 1979, p559
5. Dufrense RG. Tattoos. *Plastic Surgery Secrets* (ed.) Weinzwieg J; Philadelphia: Hanley & Belfus, Inc., 1999, p325.
6. Ashinoff R, Geronemus RG: Rapid response of traumatic and medical tattoos to treatment with the Q-switched ruby laser. *Plast Reconstr Surg* 1993, 91(5); 841-5.



## INSTRUCTION TO AUTHORS

All material submitted for publication should be sent exclusively to the Pakistan Journal of Plastic Surgery. Work that has already been reported in a published paper or is described in a paper sent or accepted elsewhere for publication should not be submitted. Multiple or duplicate submission of the same work to other journal should be avoided as this fall into the category of publication fraud and are liable for disciplinary consequences, including reporting to Pakistan Medical & Dental Council and Higher Education Commission. A complete report following publication of a preliminary report, usually in the form of an abstract, or a paper that has been presented at a scientific meeting, if not published in full in a proceedings or similar publication, may be submitted. Press reports of meetings will not be considered as breach of this rule, but additional data or copies of tables and illustrations should not amplify such reports. In case of doubt, a copy of the published material should be included with a manuscript to help the editors decide, how to deal with the matter.

Authors can submit their articles by post or by E-mail: [mughese@yahoo.com](mailto:mughese@yahoo.com) to the Managing Editor, Pakistan Journal of Plastic Surgery. Article can also be submitted by post or by hand on a Compact Disc (CD) with three hard copies (laser copies or inkjet, photocopies are not accepted). Articles submitted by E-mail do not require any hard copy or CD.

### General archival and linguistic instructions.

The author should submit the manuscript typed in MS Word. Manuscripts should be written in English in British or American style/format (same style should be followed throughout the whole text), in past tense and third person form of address. Sentences should not start with a number or figure. Any illustrations or photographs should also be sent in duplicate. Components of manuscript should be in the following sequence: a title page (containing names of authors, their postal and Email addresses, fax and phone numbers, including mobile phone number of the

corresponding author), abstract, key words, text, references, tables (each table, complete with title and footnotes) and legends for illustrations and photographs. Each component should begin on a new page. The manuscript should be typed in double spacing as a single column on A4 (8-1/2" x 11" or 21.5 cm x 28.0 cm), white bond paper with one inch (2.5 cm) margin on one side.

### Material for Publication.

The material submitted for publication may be in the form of an Original research (Randomized controlled trial - RCT, Metaanalysis of RCT, Quasi experimental study, Case Control study, Cohort study, Observational Study with statistical support etc), a Review Article, Commentary, a Case Report, Recent Advances, New techniques, Debates, Adverse Drug Reports, Current Practices, Clinical Practice Article, Short Article, KAP (Knowledge, Attitudes, Practices) study, An Audit Report, Evidence Based Report, Short Communication or a Letter to the Editor. Ideas and Innovations can be reported as changes made by the authors to an existing technique or development of a new technique or instrument. A mere description of a technique without any practical experience or innovation will be considered as an update and not an original article. Any study ending four years prior to date of submission is judged by Editorial Board for its suitability as many changes take place over the period of time, subject to area of the study. Studies more than four years old are not entertained. JCPCP also does not accept multiple studies/multiple end publications gathered/derived from a single research project or data (wholly or in part) known as 'salami slices'.

Original articles should normally report original research of relevance to clinical medicine. The original paper should be of about 2000-2500 words excluding abstract and references. It should contain a structured abstract of about 250 words. Three to 10 keywords should be given for an original article as per MeSH (Medical Subject Headings). There should be no

more than three tables or illustrations. The data should be supported with 20 to 25 references, which should include local as well as international references. Most of the references should be from last five years from the date of submission.

Clinical Practice Article is a category under which all simple observational case series are entertained. The length of such article should be around 1500 - 1600 words with 15 - 20 references. The rest of the format should be that of an original article. KAP studies, Audit reports, Current Practices, Survey reports and Short Articles are also written on the format of Clinical Practice Article. Evidence based reports must have at least 10 cases and word count of 1000-1200 words with 10 - 12 references and not more than 2 tables or illustrations. It should contain a non-structured abstract of about 150 words. Short communications should be of about 1000 words, having a nonstructured abstract of about 150 words with one table or illustration and not more than five references. Clinical case reports must be of academic and educational value and provide relevance of the disease being reported as unusual. Brief or negative research findings may appear in this section. The word count of case report should be 1200-1500 words with a minimum of 3 key words. It should have a non-structured abstract of about 100-150 words (case specific) with maximum of 10 references.

Review article should consist of critical overview/analysis of some relatively narrow topic providing background and the recent development with the reference of original literature. It should incorporate author's original work on the same subject. The length of the review article should be of 2500 to 3000 words with minimum of 40 and maximum of 60 references. It should have non-structured abstract of 150 words with minimum 3 key words. An author can write a review article only if he/she has written a minimum of three original research articles and some case reports on the same topic.

Letters should normally not exceed 400 words, with not more than 5 references and be signed by all the authors-maximum 3 are allowed. Preference is given to those that take up points made in contributions published recently in the journal. Letters may be published with a response

from the author of the article being discussed. Discussions beyond the initial letter and response will not be entertained for publication. Letters to the editor may be sent for peer review if they report a scientific data. Editorials are written by invitation.

Between 3 to 10 key words should be given for all the category of manuscripts under the abstracts as per mesh [medical subject heading].

### **Dissertation / Thesis Based Article.**

An article, based on dissertation, approved by REU, submitted as part of the requirement for a Fellowship examination of the PJPS, can be sent for publication provided the data is not more than four years old. Approval of REU is not required for an article submitted for second fellowship examination in lieu of dissertation. The main difference between an article and a dissertation is the length of the manuscript, word count, illustrations and reference numbers. Dissertation based article should be re-written in accordance with the journal's instructions to the author guidelines. Such articles, if approved, will be published under the category of Dissertation based article.

### **Ethical Considerations.**

If tables, illustrations or photographs, which have already been published, are included, a letter of permission for re-publication should be obtained from author (s) as well as the editor of the journal where it was previously published. Written permission to reproduce photographs of patients, whose identity is not disguised, should be sent with the manuscript; otherwise the eyes will be blackened out. If a medicine is used, generic name should be used. The commercial name may, however, be mentioned only within brackets, only if necessary. In case of medicine or device or any material indicated in text, a declaration by author/s should be submitted that no monetary benefit has been taken from manufacturer/importer of that product by any author. In case of experimental interventions, permission from ethical committee of the hospital

should be taken beforehand. Any other conflict of interest must be disclosed. All interventional studies submitted for publication should carry Institutional Ethical & Research Committee approval letter.

Ethical consideration regarding the intervention, added cost of test, and particularly the management of control in case control comparisons of trials should be addressed: multicentric authors' affiliation may be asked to be authenticated by provision of permission letters from ethical boards or the heads of involved institutes.

### **Tables and Illustrations.**

Legends to illustrations should be typed on the same sheet. Tables should be simple, and should supplement rather than duplicate information in the text; tables repeating information will be omitted. Each table should have a title and be typed in double space without horizontal and vertical lines on an 8-1/2" x 11" (21.5 x 28.0 centimeters) paper. Tables should be numbered consecutively with Roman numerals in the order they are mentioned in the text. Page number should be in the upper right corner. If abbreviations are used, they should be explained in footnotes. When Graphs, scatter grams, or histograms are submitted, the numerical data on which they are based should be supplied. All graphs should be made with MS Excel and other Windows/Macintosh compatible software such as SAS and be sent as a separate Excel file, even if merged in the manuscript.

### **S.I. Units.**

System International (S.I) Unit measurement should be used. Imperial measurement units like inches, feet etc are not acceptable.

### **Figures and Photographs.**

Photographs, X-rays, CT scans, MRI and photomicro-graphs should be sent in digital format with a minimum resolution of 3.2 mega pixels in JPEG compression. Photographs must be sharply focused. Most photographs taken with a mobile phone camera do not fulfill the necessary

requirements and, therefore, not acceptable for printing. The background of photographs must be neutral and preferably white. The photographs submitted must be those originally taken as such by a camera without manipulating them digitally. The hard copy of the photographs if sent, must be unmounted, glossy prints, 5" x 7" (12.7 x 17.3 centimeters) in size. They may be in black and white or in color. Negatives, transparencies, and X-ray films should not be submitted. Numerical number of the figure and the name of the article should be written on the back of each figure/photograph. Scanned photographs must have 300 or more dpi resolution. The author must identify the top of the figure. These figures and photographs must be cited in the text in consecutive order. Legends for photomicrographs should indicate the magnification, internal scale and the method of staining. Photographs of published articles will not be returned. If photographs of patients are used, either they should not be identifiable or the photographs should be accompanied by written permission to use them.

### **References:**

References should be numbered in the order in which they are cited in the text. At the end of the article, the full list of references should give the names and initials of all authors (if there are more than six, only the first six should be given followed by et al). The authors' names are followed by the title of the article; title of the journal, abbreviated according to the style of the Index Medicus (see "List of Journals Indexed," printed yearly in the January issue of Index Medicus); year, volume and page number; e.g.: Hall RR. The healing of tissues by CO<sub>2</sub> laser. Br J Surg 1971; 58:222-225 (Vancouver style). Reference to books should give the names of editors, place of publication, publisher, year and page numbers. The author must verify the references against the original documents before submitting the article. The Editorial Board may ask authors to submit either soft or hard copy (full length) of all the articles cited in the reference part of the manuscript.

## Abstract

Abstract of an original article should be in structured format with the following subheadings:

- i. Objective.
- ii. Design.
- iii. Place & duration of study.
- iv. Patients & Methods.
- v. Results.
- vi. Conclusion.

Four elements should be addressed: why was the study started, what was done, what was found, and what did it mean? Why was the study started is the objective. What was done constitutes the methodology and should include patients or other participants, interventions, and outcome measures. What was found is the results, and what did it mean constitutes the conclusion. Label each section clearly with the appropriate subheadings. Background is not needed in an abstract. The total word count of abstract should be about 250 words. A minimum of 3 Key words as per MeSH (Medical Subject Headings) should be written at the end of abstract. A non structured abstract should be written as case specific statement for case reports with a minimum of three key words.

## Introduction.

This section should include the purpose of the article after giving brief literature review strictly related to objective of the study. The rationale for the study or observation should be summarized. Only strictly pertinent references should be cited and the subject should not be extensively reviewed. It is preferable not to cite more than 10 references in this segment. Pertinent use of reference to augment support from literature is warranted which means, not more than 2 to 3 references be used for an observation. Data, methodology or conclusion from the work being reported should not be presented in this section. It should end with a statement of the study objective.

## Methods.

Study design and sampling methods should

be mentioned. Obsolete terms such as retrospective studies should not be used. The selection of the observational or experimental subjects (patients or experimental animals, including controls) should be described clearly. The methods and the apparatus used should be identified (with the manufacturer's name and address in parentheses), and procedures be described in sufficient detail to allow other workers to reproduce the results. References to established methods should be given, including statistical methods. References and brief descriptions for methods that have been published but are not well-known should be provided; only new or substantially modified methods should be described in detail, giving reasons for using them, and evaluating their limitations. All drugs and chemicals used should be identified precisely, including generic name (s), dose(s), and route(s) of administration. For statistical analysis, the specific test used should be named, preferably with reference for an uncommon test. Exact p-values and 95% confidence interval (CI) limits must be mentioned instead of only stating greater or less than level of significance. All percentages must be accompanied with actual numbers. SPSS output sheet must be attached with manuscript to clarify results (p-values).

## Results.

These should be presented in a logical sequence in the text, tables, and illustrations. All the data in the tables or illustrations should not be repeated in the text; only important observations should be emphasized or summarized with due statement of demographic details. No opinion should be given in this part of the text.

## Discussion.

This section should include author's comment on the results, supported with contemporary references, including arguments and analysis of identical work done by other workers. Study limitations should also be mentioned. A summary is not required. PJPS does not publish any

acknowledgement to the work done. Any conflict of interest, however, must be mentioned at the end of discussion in a separate heading.

### **Conclusion.**

Conclusion should be provided under separate heading and highlight new aspects arising from the study. It should be in accordance with the objectives. No recommendations are needed under this heading.

### **Peer Review**

Every paper will be read by at least two staff editors of the Editorial Board. The papers selected will then be sent to two external reviewers. If statistical analysis is included, further examination by a staff statistician will be carried out. The staff Bibliographer also examines and authenticates the references.

### **Assurances.**

Authors should provide the following information in appropriate places in the manuscript:

- A statement that the research protocol was approved by the relevant institutional review boards or ethics committees and that all the participants gave written informed consent, if applicable,
- The identity of those who analyzed the data.

Authors of original research articles are not required to submit a formal Financial Disclosure Form at the time of submission. The journal's editor shall request it later, if necessary. However, authors should notify major conflicts of interest or the source of funding in their covering letter.

### **Conflict of Interest.**

Authors of research articles should disclose at the time of revision any financial arrangement they may have with a company whose product is pertinent to the submitted manuscript or with a company making a competing product. Such information will be held in confidence while the paper is under review and will not influence the

editorial decision, but if the article is accepted for publication, a disclosure statement will appear with the article. Because the essence of reviews and editorials is selection and interpretation of the literature, the Journal expects that authors of such articles will not have any significant financial interest in a company (or its competitor) that makes a product discussed in the article.

### **Abbreviations.**

Except for units of measurement, the first time an abbreviation appears, it should be preceded by the words for which it stands.

### **Drug Name.**

Generic names should be used. When proprietary brands are used in research, include the brand name and the name of the manufacturer in parentheses after first mentioning of the generic name in the Methods section

### **Authorship Criteria.**

As stated in the Uniform Requirements, credit for authorship requires substantial contributions to (a) the conception and design or analysis and interpretation of the data, (b) the drafting of the article or critical revision for important intellectual content, critical appraisal of findings with literature search and actual write up of manuscript. and c) final approval of the version to be published. Each author must sign a statement attesting that he or she fulfills the authorship criteria of the Uniform Requirements.

PJPS strongly discourages gift authorship. Mere supervision, collection of data, statistical analysis and language correction do not grant authorship rights. Ideally all authors should belong to same department of an institute, except for multi-centre and multi-specialty studies.

The Journal discourages submission of more than one article dealing with related aspects of the same study.

### **Reprints.**

Three copies of the journal will be sent to the corresponding author.

**Copyright.**

The Journal of Pakistan Journal of Plastic Surgery is the owner of all copyright to any work published by the journal. Authors agree to execute copyright transfer of their Forms-ACP (Authors Certification Proforma) as requested with respect to their contributions accepted by the journal.

Material printed in this journal being the copyright of the PJPS, may not be reproduced without the permission of the editors or publisher. Instructions to authors appear on the last page of each issue. Prospective authors should consult these before submitting their articles and other material for publication. The PJPS, accepts only

original material for publication with the understanding that except for abstracts, no part of the data has been published or will be submitted for publication elsewhere before appearing in this journal. The Editorial Board makes every effort to ensure the accuracy and authenticity of material printed in the journal. However, conclusions and statements expressed are views of the authors and do not necessarily reflect the opinions of the Editorial Board or the PJPS. Publishing of advertising material does not imply an endorsement by the PJPS.





## Declared No. 1 in term of prescriptions in Pakistan 2011

(Executive Summary Report Pakistan Pharma Ms008)

1<sup>st</sup> and Only Manufacturing Unit  
with 2 Plants

&  
**12** Dedicated  
Manufacturing  
Facilities  
CGMP APPROVED

### PLANT - I

- ❑ Penicillin
- ❑ Cephalosporin
- ❑ Quinolone
- ❑ Psychotropics
- ❑ General Specialities
- ❑ Lyophilization

### PLANT - II

- ❑ Biotech
- ❑ Parenteral Infusion
- ❑ Lyophilization
- ❑ Ampoule
- ❑ Ophthalmic
- ❑ Ointment / Cream

### Quality Products at Affordable Prices

**Fortazim**  
(Ceftazidime U.S.P.)

**CALAMOX**  
(Co-amoxiclav)

**DROMAX**  
(Cefadroxil)

**CEFZONE**  
(Ceftriaxone sodium)

**Amkay**  
(Amikacin sulphate)

**Qumic**  
(Levofloxacin)

**TANZO IV**  
(Piperacillin +Tazobactam)

**CEFRINEX**  
(Cephadrine U.S.P.)



**Bosch PHARMACEUTICALS (PVT) Ltd.**

Head Office: 8, Modern Society, Tipu Sultan Road, Karachi 75360 Pakistan.  
Plant: Bosch House, 221, Sector 23, Korangi Industrial Area, Karachi (Pakistan)  
Web: [www.bosch-pharma.com](http://www.bosch-pharma.com), email: [info@bosch.com](mailto:info@bosch.com)



ISO 9001:2008 Certified Company

Red Dot Printer Cell: 0300-6847133