

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.

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