

Tattoo in Modern Era - Tattooing Audit in Indian Context

Dr Anu Patel¹, Dr Meet Barbhaya², Dr Krina Patel³

¹Third Year Resident, Department of Dermatology Venereology and Leprology, GMERS Medical College and Civil Hospital, Sola, Ahmedabad, India

²First Year Resident, Department of Dermatology Venereology and Leprology, GMERS Medical College and Civil Hospital, Sola, Ahmedabad, India

³Professor and Head, Department of Dermatology, Venereology and Leprology, GMERS Medical College and Civil Hospital, Sola, Ahmedabad, India

Address of the corresponding author: Dr Krina B Patel (Professor and head), A block, OPD NO 202, Department of Dermatology, GMERS Medical College and Hospital Sola Ahmedabad-380060, India

Abstract: Introduction: Professional or amateur tattoos are increasingly used fashion wear for young generation in India. The demand for removal of tattoos once done enthusiastically is also increasingly common. It is important for practitioners to know reasons and means of tattooing and its removal with adverse tattoo reactions. While some tattoo-related complications (TRCs) may be nonspecific and challenging to diagnose, others present overtly and can be identified quickly by a well-informed practitioner. Aim: To study type and means of tattooing and its reason for removal. To study the adverse tattoo reactions. Method: An observational study of patient presenting with tattoos and for tattoo removal in the department of dermatology. Data regarding tattoos and its reason for tattoo removal was noted of various patients. Results: Majority of the patients opting for tattoo removal in our study belonged to the age group of 18-25 years with majority of them having a single tattoo. Majority of the patients 71(47.33%) opted for tattoo removal due to job requirement. Most common side effects were the transient inflammatory reaction post getting a tattoo which last for few days and were controlled by topical corticosteroids and cold compression. Severe side effects which should be taken care of and physician should be vigilant were the cellulitis, cutaneous tuberculosis (10%), tattoo granuloma and severe allergic dermatitis. Most complications observed in our study were among the immature tattoos done by amateur tattoo artist. Conclusion: This study revealed that common reason for tattooing is for their identification while black ink is commonly used. Infections and tattoo reactions are common in amateur tattoos done by unprofessional. Main reason for tattoo removal is job achievement. Awareness and standardization of tattooing should be incorporated to avoid unnecessary complications.

Keywords: Tattoo reactions, reason behind tattooing, tattoo removal

1. Introduction

Tattoos are a form of permanent body modification or adornment that is created when by insertion of exogenous pigment or dye /ink into the dermis for creating a permanent design. Tattooing is commonly practiced by people of nearly every race and country in the world. Pioneers of this trend are particularly persons with tattoos who are in the public eye, such as actors, musicians, and sports personalities/athletes.

Potential medical consequences, such as infections owing to bacterial contamination, or allergic reactions only rarely become visible in public. Increase in trend of tattoos among the young generations are putting them at a risk of various Infectious and Non- Infectious Condition. Side Effects seen range from the mild effects like burning sensations, itching, mild swelling, redness, pain etc and are usually treated at home. More serious adverse reactions in tattoos, associated with objective symptoms and significant discomfort are noninfectious e.g tattoo granuloma to superficial or systemic bacterial and viral infections mainly hepatitis B, hepatitis C, tuberculosis, staphylococcal infections and even HIV^[1]. Reactions include aseptic inflammation, allergic reactions, and hypersensitivity to the tattoo ink, especially red ink, but also to chromium in green ink, cadmium in yellow ink, and cobalt in blue ink. However over a long run most people

regret getting tattoos in the first place and opt for tattoo removal due to various reasons like non acceptance by society or hindrance in employment etc. Individuals with tattoos are often perceived as antisocial, aggressive, or immature by society.

Since late 1970s lasers are used as a modality of tattoo removal due to its higher efficacy and lower side effect profile.

We undertook this study to understand the clinical presentation of tattoos among the patient, mode of tattooing commonly observed, hazards associated with tattooing and reasons behind tattooing and removal of the same.

2. Aims and Objectives

- 1) To study type and means of tattooing and its reason for removal
- 2) To study the adverse tattoo reactions

3. Materials and Method

This study was an observational study carried out in time period between October 2017 to October, 2019, at Dermatology OPD of GMERS Medical College and Hospital, Sola, Ahmedabad. All the patients presenting to

Volume 8 Issue 12, December 2019

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

OPD asking for tattoo removal were included in the study except the ones not giving consent. At the time of presentation patients were asked to fill a form in a language known to patient which included the demographic details of the patient, history of tattoo, reason behind getting a tattoo & reason for the removal. Before undergoing Nd:Yag laser tattoo removal patient was asked to get tested for HIV, HbsAg, Anti HCV IgM and IgG antibodies and Mantoux test.

Average 2-3 patients per week visited the Dermatology OPD with request for tattoo removal. Our study includes data of 150 patients opting for tattoo removal and giving consent and agreeing to participate in our study.

4. Results

The study population included 150 patients out of which 96(64%) were Male and 54(36%) were female. Median age at the time of presentation for the study population was 27 years (range: 17-38 years; mean = 25.4 years). Median age of patients at the time of getting a tattoo was 22 years (Mean age = 21.3 years). Out of 150, 118 patients (78.67%) had only single tattoo while 21 (14%) patients had 2 tattoos and 11(7.33 %) patients had 3 tattoos in total of 193 tattoos were included for tattoo removal in 150 patients. Majority of patients 94(62.67%) had tattoos done by amateur while only few patients 56(37.33%) had professional tattoos.

Table 1: Sites of tattoo

Site	Number of tattoos
Forearm	113 (58.55%)
Dorsum of hand	32 (16.58%)
Arm	27 (13.99%)
Nape of Neck/Side of neck/Clavicle	19 (9.84%)
Lower Back	2 (1.04%)
	Total= 193

Table 2: Reasons for getting a tattoo

Reason	Number of Patients
To Identify Themselves (faith, sun signs, gang name, etc)	68(45.33%)
For Fashion Purpose	54(36%)
Honor Loved Ones	18(12%)
For Medical Purpose (Hide old scars)	05(3.33%)
Other	05(3.33%)
	Total = 150

Table 3: Complications after getting a tattoo

Side Effects	Number of Patients (%)
Redness, Swelling, Irritation	47 (31.33%)
Local Bacterial Infection	19(12.67%)
Dyschromia	17(11.33%)
Cutaneous Tuberculosis	15(10.00%)
Scarring	13(8.67%)
Social Embarrassment causing psychological stress	12(8.00%)
Tattoo Granuloma	10(6.67%)
Contact Dermatitis to after care products	7(4.67%)
Photodermatitis	7(4.67%)
Allergic Contact Dermatitis	6(4.00%)
Hepatitis B	2(1.33%)
Hepatitis C	1(0.67%)

Majority of patients 47(31.33%) experienced redness, swelling and irritation for a few days after getting a tattoo at the site of the tattoo. 19(12.67%) patients gave a history of local bacterial infection in the form of pustules formation at the site of tattoo out of which 3 patients presented with severe cellulitis like presentation at the site of the tattoo.13(8.67%) patients presented with scarring at the site of the tattoo.15(10%) patients were infected with cutaneous tuberculosis. 10(6.67%) patients had tattoo granuloma at the site of tattoo of which 6 tattoos were present over forearms and 4 over dorsum of hand. 7(4.67%) patients had contact dermatitis to after care products while 6(4.00%) had allergic contact dermatitis Serological Investigations done before laser tattoo removal showed 1 patient having HBsAg positivity, while 2 patients were having anti HCV IgG antibody positivity. Mantoux test was done in all patients which showed 17(11.33%) patients had Mantoux positivity.



Figure: Fading Fig: Tattoo Granuloma

Table 4: Reasons for tattoo removal

Reason For Tattoo removal	Number of Patients
For a Job	71(47.33%)
Bad Tattoo/Faded Tattoo/Out of Style Tatoo	26(17.33%)
Relationship Ended	18(12%)
Wanting to Get a new tattoo	20(13.33%)
Social Reasons	15(10%)
	Total = 150

Table 5: Tattoo Ink

Ink	No. of Tattoos
Black Ink	127
Red Ink	28
Green Ink	23
Blue Ink	4
Other Ink	2



Figure: Multiple Inks

Majority of the tattoos had black ink with other inks such as Red, Green, blue, etc inks intermixed within the tattoo.

5. Discussion

Tattoo is an art form practised since 1000 years. With increase in trends for tattooing in this modern era, it is seen that there is an increase in frequency of tattoo related complications faced by physicians in their daily practices.

Most of the youngsters get a tattoo just under the influence of public figures, under peer pressure, honouring their loved ones, following a trend but most of the time is regretted in future.

Majority of the patients who opt for tattoo removal are mainly due to job requirements a large portion of the population are the ones wanting to pursue a career in the armed forces, law enforcement, administrative positions, financial institutions, banks and teaching jobs. Couples usually have a trend of showing their affection by tattooing the name of their significant other on their body which is regretted after the broken relationship. Tattoos tend to get lighten over the years, with increase in age and size of the person tattoos tend to lose its original detailing and structure, while some tattoos just get out of trend or person just get simply bored with the old one and opts for a new tattoo at the same site.

Whenever a foreign body is injected into the body there is always a chance of body reacting towards it. Reaction to the tattoo depends upon the type of dyes used. Variety of colours/dyes constituted by different pigments Black (carbon), Red (cinnabar, Mercuric sulphide, iron oxide), Yellow (cadmium yellow), Green (chromium oxide), blue (azure blue, cobalt blue)^[2]. Depending upon the compounds used and the color of the tattoo, a variety of cutaneous reactions can be expected.

The ink used by the professional and amateur tattoo artists differs significantly in the composition. Amateur tattoo artist commonly uses ink with carbon particles, while for professional tattoos, a mixture of insoluble metals with organic dyes is used. Tattoo-associated dermatopathic may be reactive (allergic, lichenoid, granulomatous, or photosensitive) or infective (inoculation of syphilis, infectious hepatitis, tuberculosis, HIV, warts, molluscum, Hansen's disease) or may induce a Koebner response in patients with active lichen planus or psoriasis. Majority of the complications seen are non specific and difficult to diagnose while most of them are quickly diagnosed and managed by practitioners. Adverse effects seen with the tattooing may be either reactive transient acute inflammatory reaction to trauma via needle to skin or a hypersensitivity reaction to dye or even severe cases of anaphylaxis have been reported in the literature. Majority of such complications resolve spontaneously or are managed by the use of topical corticosteroids. Discoid lupus erythematosus and tattoo inoculation leprosy are rare but has been reported to occur.

We are not including the complications noted to use during the process of laser tattoo removal but a different complaint with which many patients presented was severe contact dermatitis leading to severe erythema, ulceration and damage to skin was because of use of local medicines(

highly irritant lotions containing salicylic acid or any other acid, topical corticosteroids) for tattoo removal.

6. Conclusion

Young generation mainly have tattoos under the rush of enthusiasm, peer pressure and influence of public figures without knowing the consequences which are later regretted and opts for tattoo removal.

As the trend for tattoo acquisition increases, the demand for tattoo removal will similarly rise. Better regulation of tattoo inks is required for ensuring safer application and ease of removal, but is currently lacking especially in our country. Effective recognition and management of Tattoo associated complications require an open-mind, high degree of clinical suspicion, and nonjudgmental approach to a mainstream phenomenon that is still considered by many to be a taboo.

7. Conflict of Interest

Nil

References

- [1] Petrochko JM, Krakowski AC, Donnelly C, Wilson JB, Irick JB, Stawicki SP. Tattoo-associated complications and related topics: A comprehensive review. *Int J Acad Med* 2019;5:19-50
- [2] Andrea Bassi, Piero Campolmi, Giovanni Cannarozzo, et al., "Tattoo-Associated Skin Reaction: The Importance of an Early Diagnosis and Proper Treatment," *BioMed Research International*, vol. 2014, Article ID 354608, 7 pages, 2014.