

Cosmetic lip tattoo sequelae: A case report and review of literature

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Abstract

The interest in various cosmetic procedures is becoming a spreading concern to population of different age groups and genders. As a result of the popularity of cosmetic tattooing, drawbacks started to appear more often than before. We present a 48-year old Saudi lady, who developed a herpes infection of the lips following a cosmetic lip tattoo. The article describes the historical aspects of lip tattooing and reviews the reported complications.

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Keywords: Tattoo; Lip; Cosmetic

1. Introduction

Tattoo is a word of a Tahitian origin, which means to puncture the skin and stain the spots in figures ([Collins' Etymological Dictionary, 1930](#)). Tattooing or dermatography is an ancient practice that dates back to 3000 BC ([Pesapane et al., 2014](#)). It may be performed deliberately or introduced accidentally to the skin by trauma.

Cosmetic tattooing or micropigmentation has evolved into becoming a popular trend among the public since the late 1970s. It is used to enhance facial features, minimize asymmetry and create fullness ([Wetzel, 2012](#)). It is also favored by ladies who find difficulty applying cosmetics due to visual or physical impairment ([De Cuyper, 2008](#)). In contrast to the traditional tattoo machine used in deco-

orative tattooing, micropigmentation is done through injecting a pigment into the dermis using a handheld tattoo pen ([Simunovic and Shinohara, 2014](#)). The most common procedures done include applying permanent eyeliner, eyebrows, lip liner or a full lip pigment, cheek blush and beauty marks ([Wetzel, 2012](#)).

In a number of cultures, lip tattooing is used to signify a certain status, as lower lip tattooing in Sudanese ladies indicates that the lady is married, whereas tattooing at the angles of the mouth is believed to guard from the evil eye in the Wodaabe people of Nigeria and Cameroon ([Griffiths et al., 2016](#)). At present, cosmetic lip tattooing using a pink or red color is performed to camouflage lip darkness, a feature that was once presumed as a beauty sign in the Arabian peninsula back in the 7th century. Another emerging method for treating dark lips is the use of frequency-doubled Q-switched Nd:YAG laser ([Kunachak et al., 2001](#)).

Although tattooing is generally considered to be a decorative or cosmetic body art, medical indications exist. These include camouflaging recalcitrant vitiliginous lesions of the skin and mucosa, concealing hairless areas of scars, skin grafts and refractory alopecia areata, disguising scars

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of cleft lips and following flap reconstruction of the lower lips (Garg and Thami, 2005).

As a consequence to the tremendous advancement and demand for micropigmentation, the need ensues to raise the awareness of cosmetic lip tattoo complications, which include infections, hypersensitivity reactions, granuloma formation and malignancy. In this case, we report a cosmetic lip tattoo that was complicated by herpes infection.

2. Case report

A 48-year old lady, presented to the dermatology clinic with a 2-day history of scattered lesions, swelling and burning sensation of the lips. Her symptoms developed after having a cosmetic lip tattoo that was done in a salon in Lebanon, two days prior to the onset of symptoms. The patient has done this tattoo to camouflage the dark color of her lips.

There was no history of fever, malaise or other systemic complaints. She had a past history of recurrent herpes labialis, but never as extensive as her current presentation. On examination, her vital signs were within normal limits. There were scattered clusters of vesicular lesions on a base of erythema on the lips, and the upper lip was swollen and covered with crust (Fig. 1). The oral cavity was clear and an obtained swab revealed no bacterial growth. A clinical diagnosis of herpes infection was made. Patient was prescribed Valacyclovir at a dose of 2 g twice a day for one day. The lesions have healed and the swelling has subsided.

3. Discussion

Many patients are seeking cosmetic tattoo or permanent makeup of the lips for different purposes, such as enhancing the lips appearance, giving a fuller look, and minimizing asymmetry (Wetzel, 2012). In the presented case, the patient's purpose of cosmetic lip tattooing is to camouflage the dark color of her lips.

The performance of tattooing without regulated guidance and with lack of adherence to optimal aseptic tech-

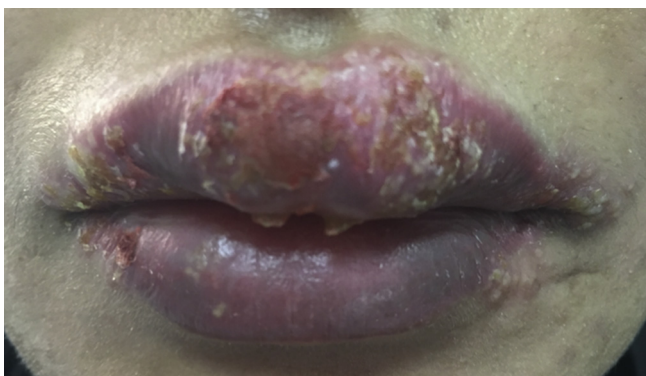


Fig. 1. A clinical picture of the lips showing upper lip swelling, scattered cluster of vesicles, and crust formation.

niques has led to an increase in the number of reported adverse effects (Khunger et al., 2015).

As in the presented case, infections can complicate tattooing. To date, two cases of herpes infections occurring at the site of a tattoo on the arm and the flank have been reported in the literature (Marshall et al., 2007; Kluger and Armingaud, 2017). In contrast to the localized clustering characterizing herpes infections, the vesicles rather have developed in a scattered distribution at the site of tattoo placement. The term herpes compunctorum has been proposed to describe this condition. It is attributed to the contaminated needle used in tattooing or due to a secondary herpetic infection of the freshly injured skin, due to the loss of the barrier function.

The most worrisome complication of tattooing is the development of malignancy. To date, there are two reported cases of malignancies arising at the site of cosmetic lip tattoo, the first one has developed on the upper lip shortly after the application of a red cosmetic tattoo. The histopathological examination of the rapidly growing lesion was consistent with keratoacanthoma-like squamous cell carcinoma, and was successfully treated with Mohs micrographic surgery (Ortiz and Yamauchi, 2009). The second reported case was of a lady who has had her lips tattooed with a red ink. Two months later, she started to develop eruptive squamous cell carcinomas of the keratoacanthoma type on the lips, over an eight-month period. Lesions were treated by different modalities with variable efficacy (Barton et al., 2015).

The association between tattoos and the development of malignancies has largely been debated; nevertheless, it is still considered as coincidental (Kluger et al., 2008). Many authors have proposed hypothetical theories beyond the occurrence of skin cancer in the tattoo site. Tattooing traumatizes the skin triggering an inflammatory response in an attempt to degrade the foreign material (Müller et al., 2002), and it has been noticed that most keratoacanthomas have arisen shortly after tattooing (Simunovic and Shinohara, 2014; Kluger, 2010), which may support the traumatizing factor. The pigment used may potentially be harmful as some of the components are classified as carcinogenic or possibly carcinogenic to humans by the International Agency for Research on Cancer (IARC) (Kluger and Koljonen, 2012). Furthermore, ultraviolet (UV) radiation and laser light exposure may decompose the initial tattoo pigment resulting in new byproducts release, which are found to be toxic or even carcinogenic (Vasold et al., 2008). Despite these facts, the precise composition of the tattoo colorants is not under regulation and their toxicological profile is unknown.

Among the various colors used in tattooing, it has been observed that most keratoacanthomas and squamous cell carcinomas develop in a close apposition of red tattoo ink, the color of concern in cosmetic lip tattooing (Simunovic and Shinohara, 2014; Kluger and Koljonen, 2012; Fraga and Prossick, 2010; Kluger et al., 2008).

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