

A case of verru plana on tattoo

Ayse Serap Karadag,¹ Serap Gunes Bilgili,² Sevda Onder,³ Mustafa Kosem⁴

Abstract

Tattoo is a popular cosmetic decoration, however several different tattoo-induced complication have been described. Several tattoo related cutaneous reactions such as allergic, granulomatous, lichenoid reactions, and infections have been reported. A 20 year-old male presented with multiple papules on the dragon shaped tattoo. The clinical and histopathological assessments were consistent with verrucas. Tattoo has become increasingly popular among young people. People interested in tattoos should be informed on its related infections and complications during and following tattooing. Herein, we present this rare tattoo induced verru plane to point out tattoo related complications and its treatments.

Keywords: Tattoo, Verrucas, Infections.

Introduction

Tattooing is an increasingly popular cosmetic decoration in today's western society.¹ Since tattoo has become more popular, its related complications are more frequently seen. In literature, several tattoo related cutaneous reactions have been reported.^{2,3} A 20 year-old male presented with multiple, tattoo-coloured papules on the dragon shaped tattoo localizing right flexor surface of the arm. The clinical and histopathological assessments were consistent with verrucas. Herein, we present this rare tattoo induced verru plane to point out tattoo related complications and its treatments.

Case Report

A 20-year-old man with no past medical history had dragon tattoo, made by a non professional person, from blue, dark blue, black, and red colours on right anterior posterior part of his arm one year ago. He developed numerous, small, skin-coloured, acuminate papules in

the area of the dark blue dye on the right arm after six months following the tattooing (Figure-1). He had no verrucas in the tattoo on the left arm, but he had a few verruca vulgaris on his dorsum of the left hand. The patient denied intravenous drug abuse. He didn't receive immunosuppressant drugs. The laboratory testing including HIV and hepatitis B and C were negative. The dermatological examination showed



Figure-1: Tattoo on the left and right arm and numerous, small, skin-colored, acuminate papules in the area of the dark blue dye on the right arm.

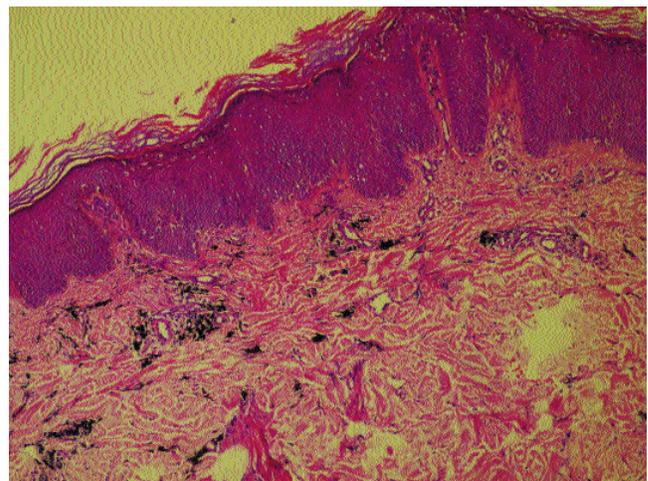


Figure-2: Epidermal acanthosis, papillomatosis and coilosities with intradermal tattoo deposits (H-E X 100).

¹Department of Dermatology, Istanbul Medeniyet University, Faculty of Medicine, Goztepe Research and Training Hospital, Istanbul, ^{2,3}Department of Dermatology, ⁴Department of Pathology, Yuzuncu Yil University Faculty of Medicine, Van, Turkey.

Correspondence: Ayse Serap Karadag. Email: karadagaserap@gmail.com

multiple, pedunculated or flat verrucous papules with 1-5 mm size following the tattoo pattern. The histopathological examination showed acanthosis, papillomatosis, hyperkeratosis, perinuclear vacuolization of some keratinocytes, and irregular shaped granules of dark amorphous material in the papillary and middle dermis (Figure-2). He was treated with topical retinoic acid cream 1%, but the warts remained unchanged and he denied further therapies.

Discussion

Several different tattoo-induced conditions have been described. Tattoo-induced reactions are mainly divided into 3 groups: 1) Allergic/granulomatosis/ lichenoides reactions, 2) Inoculation/infections, 3) Coincidental lesions.¹ Inoculation or infective diseases include local bacterial infections (*S.aureus*, *Streptococcus*, *pseudomonas*) and transmission of hepatitis B and C, syphilis and human immunodeficiency virus.^{2,4} Other infections are *M. tuberculosis*, atypically mycobacterial infections, *C.tetania*, and syphilis.^{1,4} Allergic reactions, phototoxicity, pseudolymphomatous reaction, immunologic rejection of tattoo can be seen during or after tattooing.⁴ Rare tattoo following complications include allergic reaction, phototoxicity, pseudolymphomatous reaction, tattoo immunologic rejection, discoid lupus erythematosus, primer inoculation tuberculosis, sarcoidal granulomas, and psoriasis.¹

Inoculation of HPV during tattoo placement, especially verruca plana on decorative tattoo is very rare.^{1,3,5} The source of the virus can be tattoo instrument (using by infected material), saliva of the artist, patient with a previously unnoticed verrucae in the area of the tattoo with subsequent traumatic spread; or contamination of the colour.^{1,3} Inappropriate sterilization of non-disposable needles or reuse of ink contaminated with the blood from an infected person can cause transmission at different stages of tattooing and piercing.⁶ Our patient's infection was present only on the area of the blue dye. This may explain with two possibilities: Either the dye was infected or the infection was related with the dark coloured dyes.

Few case reports on tattoo related verruca have been reported.^{2,3} In our case, the patient had 5 verrucas on the dorsum of the left hand. He had warts prior to having tattoo. The verrucas in the tattoo appeared 6 months following the tattoo. We attempted to examine the tattoo artist and his instruments, but that were unsuccessful. He had tattoos on both of his arms, however he only developed verruca on the right arm

tattoo. The formation of verruca followed the tattoo pattern that might be related to infected tattoo tools or infected dyes or contaminated sites with pre-existing verrucas. Interestingly, he did not develop verruca on the arm with pre-existing verruca, but developed verruca on the other arm. HPV implantation and following verruca formation were reported after skin grafting and carbon dioxide laser procedures. In addition, tattoo induced verruca formation following sun burn has been reported and may be related to local skin immune response change after sun burn.⁵ He was very stressful when he developed tattoo induced verrucas.

Prevention of tattoo related infections is as important as the treatment of the infections. Although there is limited research, the survival of HCV on propofol solutions ranges from a few days to a month. Since the risk of blood borne pathogens through tattooing and piercing is too high, the US Occupational Safety and Health Administration includes these practices in their blood-borne safety standards. The risk of transmission of blood borne pathogens are very high when tattooing and piercing are performed with non-sterile equipment including guitar strings, paper clips, or sewing needles, which are usually cleaned by heating or use of boiling water.⁶

The treatment options of tattoos are surgical excision, dermal ablation, cryosurgery, chemical peeling, and permanent wave laser therapy. Today, laser therapy is a safe and effective method. Eight to 12 laser sessions are required for professional tattoos. Complete peeling may not be always possible because dermal pigment can be too deep in some cases. Tattoos requiring multiple colors may need different laser combinations. Imiquimod 5% cream has been shown effective in animal models.⁷

In conclusion, tattoo has become increasingly popular among young people. As health care providers, we need to educate youths about the risk of using non-sterilized equipment for tattooing and piercing and they should encourage being cautious and judgmental about the quality and hygiene of the artist activities.⁸ Therefore, people interested in tattoos should be informed on its related infections and complications during and following tattooing.

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