

PRIVREMENE TETOVAŽE CRNOM KANOM KAO UZROK KON-TAKTNOG DERMATITISA I LOKALIZOVANE, SAMOOGRA NIČA-VAJUĆE HIPERTRIHOZE – PRIKAZ TRI SLUČAJA

TEMPORARY BLACK HENNA TATTOOS AS A CAUSE OF CONTACT DERMATITIS AND LOCALIZED, SELF-LIMITING HYPERTRICHOSIS – THREE CASE REPORTS

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Sažetak

Uvod. Privremene tetovaže crnom kanom veoma su popularne među decom i adolescentima, naročito tokom letnjih festivala i odmora. S obzirom da se prirodna kana sporo suši i ne daje zadovoljavajući intenzitet boje tetovaže, njoj se dodaju različite supstance kako bi se ovi nedostaci prevazišli. Tako nastaje crna kana koja najčešće sadrži para-fenilendiamin, poznat kontaktni alergen, čija primena može prouzrokovati brojne neželjene reakcije na koži. **Prikaz slučajeve.** Prikazujemo tri slučaja kontaktnog dermatitisa i samoograničavajuće lokalizovane hipertrihoze u dečjem uzrastu, nakon privremenih tetovaža crnom kanom. Kod svih pacijenata, kliničkim pregledom uočene su promene na koži nastale usled kontaktnog dermatitisa u obliku prethodno urađenih tetovaža, sa prisustvom terminalnih dlaka u istoj regiji. Sprovedena je kratkotrajna terapija topikalnim kortikosteroidima nakon čega je došlo do povlačenja inflamatornih lezija, a hipertrihoza spontano regresirala u periodu od tri meseca. **Diskusija.** Hipertrihoza koja je nastala nakon tetoviranja crnom kanom mogla bi se pripisati neželjenom efektu topikalne kortikosteroidne terapije, međutim kod jednog pacijenta ova terapija sprovedena je veoma kratkotrajno, a kod dva pacijenta hipertrihoza je opisana već na prvom pregledu, u konjukciji sa kontaktnim dermatitisom. Takođe, hipertrihoza se može javiti izolovano, bez pojave kontaktnog dermatitisa, što je u skladu sa ranije prijavljenim slučajevima u literaturi. **Zaključak.** Samoograničavajuća lokalizovana hipertrihoza predstavlja retku, ali klinički značajnu komplikaciju privremenih tetovaža crnom kanom. Imajući u vidu sve češću upotrebu kane u dekorativne svrhe, pacijente prikazujemo kako bismo skrenuli pažnju na moguće komplikacije privremenih tetovaža i istakli važnost adekvatnog informisanja i edukacije pacijenata.

Ključne reči: kana; tetoviranje; sredstva za bojenje; para-fenilendiamin; kontaktni dermatitis; hipertrihoza; dete; faktori rizika; ishod lečenja

Abstract

Introduction. Temporary black henna tattoos are highly popular among children and adolescents, especially during summer festivals and holidays. Since natural henna dries slowly and provides limited pigment intensity, various additives are incorporated to enhance its properties. This leads to the production of black henna, which most commonly contains para-phenylenediamine, a well-known contact allergen capable of inducing numerous adverse skin reactions. **Case Reports.** We report three pediatric cases of contact dermatitis accompanied by self-limiting localized hypertrichosis following temporary black henna tattoos. In all patients, clinical examination revealed contact dermatitis lesions precisely matching the shape of the previous tattoo, along with localized terminal hair growth in the same area. Short courses of topical corticosteroids resulted in regression of inflammatory lesions, while hypertrichosis resolved spontaneously within three months. **Discussion.** The hypertrichosis observed after black henna tattooing may be interpreted as a potential adverse effect of topical corticosteroid therapy. However, in one patient corticosteroid therapy was minimal, and in two patients hypertrichosis was already present upon initial examination, together with contact dermatitis. Furthermore, isolated hypertrichosis without contact dermatitis has been previously described in the literature. **Conclusion.** Self-limiting localized hypertrichosis is a rare but clinically relevant complication of temporary black henna tattoos. Given the growing popularity of henna for decorative purposes, these cases underline the need for greater awareness of possible adverse reactions and for appropriate patient education. Reassurance is typically sufficient

Key words: Lawsonia Plant; Tattooing; Coloring Agents; Phenylenediamines; Dermatitis, Allergic Contact; Hypertrichosis; Child; Risk Factors; Treatment Outcome

Uvod

Tetoviranje kanom je popularno širom sveta, ali značaj i svrha tetoviranja razlikuje se u zavisnosti od tradicionalnih običaja i kulture, npr. u indijskoj, arapskoj i severnoafričkoj kulturi deo je običaja, naročito na venčanjima, verskim proslavama i kod trudnica [1,2]. Kana (lat. Lawsonia inermis) je biljka iz čijeg lišća se izdvađa zelenkasti prah, koji kada se koristi za tetoviranje u izvornom obliku daje tetovaže braonkastonarandžaste boje, a što se duže suši nakon nanošenja daje tamniju i intenzivniju prebojenost tetovirane kože [2,3].

Dakle crna kana u prirodi ne postoji, već je formulisana dodavanjem različitih supstanci, a najčešće se dodaje parafenilendiamin (engl. Paraphenylenediamine, PPD) kako bi vreme sušenja bilo kraće, a crna boja tetovaže intenzivnija [3,4]. Pored PPD-a, tatu umetnici kanu ponekad mešaju i sa drugim supstancama uključujući: teške metale (Pb, Cr, Ni, Co, Hg), ekstrakt biljke indigo, eterična ulja i kiseline, kako bi se postigla tamnija i dugotrajnija pigmentacija tetovaže [4,5].

Na prostorima Balkana takođe su veoma popularne privremene tetovaže kanom, naročito na letnjim festivalima i vašarima, u svrhu ulepšavanja. Deca ih rado biraju jer su bezbolne i popularne na društvenim mrežama, a njihovim roditeljima daju dozvolu za tetoviranje iz jednostavnog razloga – tetovaže su privremene, a njihova rezolucija brza [1–3].

Introduction

Henna tattooing is widely practiced around the world, though its cultural significance varies by region. In Indian, Arab, and North African cultures it is a longstanding practice, particularly associated with weddings, religious celebrations, and pregnancy rituals [1,2]. Henna (*Lawsonia inermis*) is a plant whose leaves are processed into a greenish powder. When applied in its natural form, it produces brownish-orange stains that darken with prolonged drying time [2,3].

Black henna does not occur naturally; it is created by adding various substances – most commonly para-phenylenediamine (PPD) – to intensify color and shorten drying time [3,4]. In addition to PPD, henna pastes may contain heavy metals (Pb, Cr, Ni, Co, Hg), indigo extract, essential oils, and acids to enhance pigmentation [4,5].

In the Balkans, temporary henna tattoos have become very popular, especially at summer festivals and fairs. Children are particularly attracted to them because they are painless and fashionable on social media, while parents often perceive them as harmless because they fade quickly [1–3].

Only a few cases of temporary hypertrichosis following henna tattoos have been reported globally. We present three pediatric cases of contact dermatitis and localized hypertrichosis following black henna tattoos obtained on the Montenegrin coast, all applied by the same tattoo artist.

U svetu postoji mali broj opisanih slučajeva, privremene hipertrichoze nastale nakon tetoviranja kanom. Prikazujemo tri slučaja kontaktnog dermatitisa i lokalizovane hipertrichoze kod dece, koji su nastali nakon tetoviranja crnom kanom na crnogorskom primorju, kod iste umetnice.

Prikaz slučajeva

Prvi pacijent. Devojčica starosti pet godina, pregledana je zbog promena na koži leve podlaktice u vidu crvenila koje svrbi. Heteroanamnestički, majka navodi da je kod devojčice urađena tetovaža kanom pre nedelju dana. Pri pregledu uočava se jasno ograničen eritematozni plak prekriven krustoskvamom, oblika jednoroga, koji odgovara prethodno urađenoj tetovaži crnom kanom (**Slika 1**). Postavljena je dijagnoza kontaktnog dermatitisa, sprovedena je trodnevna topikalna kortikosterodna terapija mometazon kremom, a pimekrolimus krem je primenjivan tokom mesec dana. Na kontrolnom pregledu nakon nedelju dana uočava se značajna regresija promena na koži, a pri dermoskopskom pregledu uočava se početak rasta terminalne dlake u tetoviranoj regiji (**Slike 2 i 3**). Nastavlja se primena pimekrolimus krema do potpune regresije promena na koži, koja se uočava nakon mesec dana (**Slika 4**).

Terminalna dlaka je spontano otpala nakon tri meseca.

Drugi pacijent. Dečak starosti 10 godina, pregledan je zbog promena na koži leve nadlaktice u vidu crvenila i pojačane maljavosti koje su se pojavile dve nedelje nakon tetoviranja kanom. Prethodno nije korišćena diferentna terapija. Pri pregledu uočava se eritematozni neindurirani plak sa diskretnim krustoskvamama i terminalnom dlakom koji su lokalizovani u regiji prethodno prisutne tetovaže (**Slika 5**). Uključen je topikalni kortikosteroidni krem. Klinički znaci kontaktnog dermatitisa su regredirali u potpunosti nakon nedelju dana, a nakon tri meseca došlo je do spontane rezolucije hipertrichoze.

Treći pacijent. Devojčica starosti šest godina, pregledana je zbog promena na koži desne potkolenice u vidu crvenila i pojačane maljavosti koje su se javile dve nedelje nakon tetoviranja kanom. Takođe, prethodno nije sprovedena diferentna terapija (**Slika 6**). Pri pregledu uočavaju se eritematozni plak, vezikule i terminalne dlake, lokalizovani u regiji prethodno prisutne tetovaže. Nakon kratkotrajne topikalne



Slika 1. Eritematozni plak prekriven krustoskvamom u obliku jednoroga, u regiji prethodno urađene tetovaže crnom kanom

Figure 1. Erythematous plaque covered with crusted scales in the shape of a unicorn, corresponding to the area of a previous black henna tattoo

Case Reports

Case 1: A 5-year-old girl presented with pruritic erythema on the left forearm. According to her mother, the child had received a henna tattoo one week earlier. Examination revealed a well-demarcated erythematous plaque with scale-crust in the shape of a unicorn, corresponding exactly the tattoo design (**Figure 1**). A diagnosis of contact dermatitis was made. Treatment consisted of a 3-day course of topical mometasone cream, followed by pimecrolimus cream for one month. Significant improvement was noted within one week. Dermoscopy revealed early terminal hair growth in the tattooed area (**Figures 2 and 3**). Pimecrolimus was continued until complete resolu-



Slika 2. Regresija kožnih promena nakon nedelju dana topikalne terapije

Figure 2. Regression of skin lesions after one week of topical therapy

kortikosterodne terapije, došlo je do rezolucije znakova kontaktnog dermatitisa, a hipertrichoza je regredirala spontano za nekoliko nedelja.

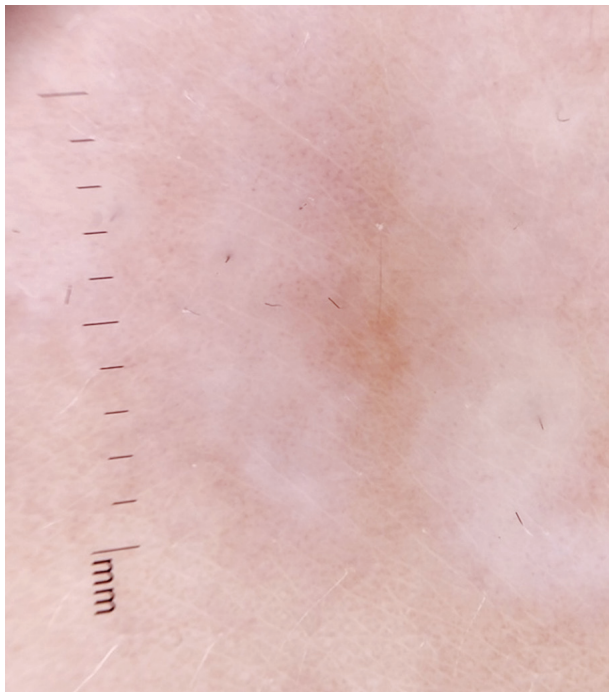
Epikutana testiranja na kontaktne alergene nisu sprovedena kod pacijenata koje prikazujemo.

Diskusija

Privremene tetovaže crnom kanom, iako popularne, sve više su u fokusu zbog brojnih neželjenih reakcija koje izazivaju na koži. Crna kana najčešće sadrži PPD, alergogenu supstancu koju je Evropska unija zabranila u svim topikalnim preparatima, osim u bojama za kosu do 6% [6].

PPD može provocirati niz neželjenih reakcija po različitim tipovima preosetljivosti. Najčešće se javlja kontaktni dermatitis sa karakterističnom kliničkom slikom u vidu eritema, vezikula, bula, plakova i krustoskvama praćenih svrabom, a ređe se javljaju urtikarija, angioneurotski edem, astma i sistemska alergijska toksičnost [3, 7, 8].

Druge neželjene reakcije koje su opisane u literaturi su: postinflamatorna hiperpigment-



Slika 3. Dermoskopski pregled pokazuje rast terminalne dlake u regiji tetovaže

Figure 3. Dermoscopic image showing the growth of terminal hair in the tattooed region



Slika 4. Potpuna regresija kožnih promena nakon mesec dana

Figure 4. Complete regression of skin lesions after one month

tion (**Figure 4**). Terminal hair shed spontaneously after three months.

Case 2: A 10-year-old boy presented with erythema and localized increased hair growth on the left upper arm, two weeks after receiving a henna tattoo. No prior treatment had been administered. Examination revealed a non-indurated erythematous plaque with mild scale-crust and terminal hair precisely localized to the former tattoo site (**Figure 5**). Topical corticosteroids were initiated, leading to full resolution of dermatitis within one week. Hypertrichosis resolved spontaneously within three months.

Case 3: A 6-year-old girl presented with erythema and increased hair growth on the right lower leg, occurring two weeks after henna tattoo application (**Figure 6**). No previous therapy has been used. Examination showed an erythematous plaque with vesicles and terminal hair corresponding to the tattoo location. Following short-term corticosteroid treatment, the dermatitis resolved, and hypertrichosis subsided spontaneously within several weeks.

Patch testing for contact allergens was not performed in any cases.



Slika 5. Eritematozni neindurirani plak sa prisutnom terminalnom dlakom u obliku prethodne tetovaže vuka

Figure 5. Erythematous non-indurated plaque with terminal hair corresponding to the previous wolf-shaped tattoo

acija, lihenoidna reakcija, perzistentna leukoderma, generalizovani multiformni eritem i Sweet sindrom [7,9].

Tri prikazana pacijenta imali su sličnu kliničku sliku, koja odgovara kontaktnom dermatitisu i lokalizovanoj hipertrichozi. Kod prvog pacijenta, trodnevna kortikosteroidna terapija je započeta pre pojave hipertrichoze. Hipertrichoza može nastati kao posledica primene topikalnih kortikosteroida, međutim, rizik za pojavu hipertrichoze postoji kada se terapija sprovodi duži vremenski period, što ovde nije bio slučaj [10]. Takođe, hipertrichoza je bila prisutna već na prvom pregledu kod drugog i trećeg pacijenta, koji prethodno nisu lečeni diferentnom terapijom. U literaturi je opisana pojava hipertrichoze kod pacijenata koji su razvili kliničku sliku kontaktnog dermatitisa, a koji nisu prethodno bili lečeni, međutim, opisani su i slučajevi hipertrichoze bez kliničkih manifestacija kontaktnog dermatitisa [11].



Slika 6. Eritem i hipertrichoza raspoređeni duž linija tetovaže

Figure 6. Erythema and hypertrichosis distributed along the tattoo lines

Discussion

Despite their popularity, temporary black henna tattoos are increasingly associated with adverse skin reactions. Black henna often contains PPD, an allergenic compound banned in topical products within the European Union except in hair dyes at concentrations up to 6% [6]. PPD may elicit a range of hypersensitivity reactions. The most common presentation is contact dermatitis, manifesting as erythema, vesicles, bullae, plaques, crusts, and pruritus. Less frequently, urticaria, angioedema, asthma, and systemic allergic toxicity may occur [3,7,8]. Additional reported reactions include post-inflammatory hyperpigmentation, lichenoid reactions, persistent leukoderma, generalized erythema multiforme, and Sweet syndrome [7,9].

All three of our patients exhibited both contact dermatitis and localized hypertrichosis. In Case 1, corticosteroid therapy preceded the appearance of hypertrichosis, although corticosteroid-induced hypertrichosis typically requires longer treatment duration [10]. In Cases 2 and 3, hypertrichosis was already present at the initial visit despite no prior therapy. The literature describes hypertrichosis occurring in patients both with and without signs of contact dermatitis [11].

Zaključak

Samoograničavajuća lokalizovana hipertrichoza predstavlja retku komplikaciju privremenih tetovaža crnom kanom. Njena pojava nije uvek udružena sa kontaktnim dermatitisom, niti je posledica primene kratkotrajne topikalne kortikosteroidne terapije. Imajući u vidu sve češću upotrebu kane u dekorativne svrhe, neophodno je znati koje neželjene reakcije crna kana može izazvati na koži. Hipertrichoza, iako samoograničavajuća, može izazvati osećaj stigmatizacije kod pacijenata, naročito u detinjstvu i adolescenciji. Neophodno je informisati pacijente i njihove roditelje o benignom toku hipertrichoze, njenoj samoograničavajućoj prirodi i izbegavanju sprovođenja dodatnih terapijskih mera.

Skraćenice

PPD – para-fenilendiamin

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Conclusion

Self-limiting localized hypertrichosis represents a rare but noteworthy complication of temporary black henna tattoos. Its occurrence does not necessarily correlate with contact dermatitis or topical corticosteroid use. Given the increasing popularity of decorative henna, clinicians should be aware of potential adverse effects. Although benign, hypertrichosis can cause psychological distress and stigmatization, particularly in childhood and adolescence. Children and their parents should be reassured about the self-limited course, and no further intervention is typically required.

Abbreviations

PPD – para-phenylenediamine

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