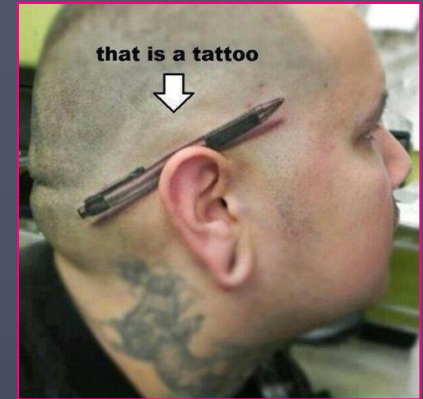




RARE COMPLICATIONS OF TATTOOS AND PIERCING

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- Tattoo is implantation of pigment in the skin
- Piercing is perforating the skin to attach jewelery
- 10% of the western population have a tattoo
- The rates are higher in piercing because of earlobe piercing

Body-modifying concepts and dermatologic problems: tattooing and piercing Martin Kaatz, MD, Peter Elsner, MD, Andrea Bauer, MD Clinics in Dermatology (2008) 26, 35–44

- Reactions to pigments and their products are common
- Rare clinical presentations can be:
 - Lichenoid
 - Pseudo-lymphomatous
- Patch tests often show negative results
- Reaction time is app. a few months to several years



- Granulomatous reactions to tattoos are reported
- These are classic foreign body reactions
- Differential diagnosis is cutaneous sarcoidosis
- Rare reactions:
 - Morphea-like lesions
 - Pseudoepitheliomatous lesions



Werchniak AE, Cheng SX, Dhar AD. Sarcoidosis presenting as tattoo changes in a patient undergoing treatment with interferon-alpha and ribavirin. *Clin Exp Dermatol* 2004;29:547-8.

Iveson JM, Cotterill JA, Wright V. Sarcoidosis presenting with multiple tattoo granulomata. *Postgrad Med J* 1985;51:670-2.

Mahalingam M, Kim E, Bahwan J. Morphea-like tattoo reaction. *Am J Dermatopathol* 2002;24:392-5. 27.

- Allergic reactions to henna (*Lawsonia inermis*) are rare
- Henna is used to dye hair, nails and skin
- PPD, which is a strong sensitizer is used with henna
- Time of sensitization is approximately 14 days
- Systemic reactions, generalized lymphadenopathy and fever may accompany ACD



Matulich J, Sullivan J. A temporary henna tattoo causing hair and clothing dye allergy. *Contact Dermatitis* 2005;53:33-6.

- Severe systemic infections after tattooing are reported
 - Sepsis, endocarditis, spinal and epidural abscesses,
 - Streptococcus pyogenes, S. aureus, Pseudomonas
 - Treponema pallidum
 - Atypical mycobacteria
- Transmission of leprosy by tattooing has been reported from India



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Korman TM, Grayson ML, Turnidge JD. Polymicrobial septicaemia with *Pseudomonas aeruginosa* and *Streptococcus pyogenes* following traditional tattooing. *J Infect* 1997;35:203.
Wolf R, Wolf D. A tattooed butterfly as a vector of atypical *Mycobacteria*. *J Am Acad Dermatol* 2003;48:73-4.
Ghorpade A. Inoculation (tattoo) leprosy: a report of 31 cases. *J Eur Acad Dermatol Venereol* 2002;16:494-9.

- There is a significant risk of hepatitis B and C and HIV
- Papilloma virus infections and mollusca contagiosa were described in tattoos
- Blood donation is not accepted for 6 to 12 months after tattooing

Haley RW, Fischer RP. Commercial tattooing as a potentially important source of hepatitis C infection. Clinical epidemiology of 626 consecutive patients unaware of their hepatitis C serologic status. *Medicine* 2000;80:134-51.

Nishioka SA, Gyorkos TW. Tattoos as risk factors for transfusions- transmitted diseases. *Int J Infect Dis* 2001;5:27-34.

Perez Gala S, Alonso Perez A, Rios Bucata I, et al. Molluscum contagiosum on a multicoloured tattoo. *J Eur Acad Dermatol Venereol* 2006;20:214-38.

- Leishmania on a tattoo in a HIV (+) man
- Severe systemic mycoses can be transmitted by tattooing
 - *Candida endophthalmitis*
 - *Zygomycosis*



Alexandridou A, Reginald AY, Stavrou P, et al. *Candida endophthalmitis* after tattooing in an asplenic patient. *Arch Ophthalmol* 2002;120: 518-9.

49. Parker C, Kaminski G, Hill D. *Zygomycosis* in a tattoo, caused by *Saksenaea vasiformis*. *Australas J Dermatol* 1986;27:107-11.

50. Colebunders R, Depraetere K, Verstraeten T. Unusual cutaneous lesions in two patients with visceral leishmaniasis and HIV infection. *J Am Acad Dermatol* 1999;41:847-50.

- Melanoma, BCC, SCC were described within tattoos
- A case of primary non-Hodgkin lymphoma was reported
- Tattoos can cover up suspect lesions and delay diagnosis
- Phagocytosis of tattoo pigments by macrophages can be mixed up with metastasis in the lymph nodes

Doumat F, Kaise W, Barbaud A, et al. Basal cell carcinoma in a tattoo. *Dermatology* 2004;208:181-2.

Soroush V, Gurevitch AW, Peng SK. Malignant melanoma in a tattoo: case report and review of the literature. *Cutis* 1997;59:111-2.

Kircik L, Armus S, van den Broek H. Malignant melanoma in a tattoo. *Int J Dermatol* 1993;32:297-8.

Armiger WG, Caldwell EH. Primary lesion of a non-Hodgkin's lymphoma occurring in a skin tattoo: case report. *Plast Reconstr Surg* 1978;62:125-7.

McQuarrie DG. Squamous-cell carcinoma arising in a tattoo. *Minn Med* 1966;49:799-801.

- Psoriasis, lichen planus and chronic DLE can be triggered
- Tattooing can reactivate HSV and HZV infections
- The interference between sarcoidosis and tattooing is controversial



Iveson JM, Cotterill JA, Wright V. Sarcoidosis presenting with multiple tattoo granulomata. *Postgrad Med J* 1985;51:670-2.

Papageorgiou PP, Hongcharu W, Chu AC. Systemic sarcoidosis presenting with multiple tattoo granulomas and an extra cutaneous granuloma. *J Eur Acad Dermatol Venereol* 1999;12:51-3.

- Tattoos on lumbosacral region are very popular
- Pigments can be transferred to deeper tissues and spinal channel during spinal puncture
- There is a risk of inflammatory and granulomatous reactions
- Red and black tattoo pigments may contain ferric oxide
- During MRI the tattoo heats up and causes burns

Kuczkowski KM. Labour analgesia for the parturient with lumbar tattoos: what does an obstetrician need to know. *Arch Gynecol Obstet* 2006;25:74.

Klitscher D, Blum J, Kreitner KF, et al. MRT induced burns in tattooed patients. Case report of an traumatic surgery patient. *Unfallchirurg* 2005;108:410-4

- Piercing complications depend on hygiene and after care
- Mild complications are reported in 10% to 30% of patients
- Common complications are local infections by *S aureus*, group A streptococci, *Pseudomonas*
- Coagulase-negative staphylococci, anaerobic bacteria (*Clostridium tetani*), atypical mycobacteria infections are rare

Brook I. Recovery of anaerobic bacteria from 3 patients with infection at a pierced body site. *Clin Infect Dis* 2001;33:e12-3.

Trupiano JK, Sebek BA, Goldfarb J, et al. Mastitis due to *Mycobacterium abscessus* after body piercing. *Clin Infect Dis* 2001;33:131-4.

- There are case reports of hepatitis B, C
- Transmission of HIV is possible
- Condyloma acuminata after piercing was reported
- Immunization of piercers with tetanus toxoid and hepatitis is recommended
- Serologic tests are indicated after direct blood contact

Pugatch D, Mileno M, Rich JD. Possible transmission of human immunodeficiency virus type 1 from body piercing. *Clin Infect Dis* 1998;26:767-8.

Altman JS, Manghani KS. Recurrent condyloma acuminatum due to piercing of the penis. *Cutis* 1997;60:237-8.

- Progressive Ludwig angina after tongue piercing was published by Perkins et al.
- Other complications reported are:
 - Sepsis, pneumonia, bacterial arthritis, infections of breast implants, glomerulonephritis, toxic shock syndrome

Perkins CS, Meisner J, Harrison JM. A complication of tongue piercing. *Br Dent J* 1997; 182:147-8.
McCarthy VP, Peoples WM. Toxic shock syndrome after ear piercing. *Pediatr Infect Dis J* 1988; 7:741-2.
Javaid M, Shibu M. Breast implant infection following nipple piercing. *Br J Plast Surg* 1999; 52:676-7.

- The risk of endocarditis is higher in piercing than tattooing
- S aureus, S epidermidis, Streptococci, Neisseria, Haemophilus were isolated
- *Tattooing or piercing is not recommended in cardiac disease*
- Millar and Moore recommend prophylactic antibiotics

Dähnert I, Schneider P, Handrick W. Piercing and tattoos in patients with congenital heart disease is it a problem. Z Kardiol 2004;93: 618-23.

Ochsenfahrt C, Friedl R, Hannekum AA, et al. Endocarditis after nipple piercing in a patient with a bicuspid aortic valve. Ann Thorac Surg 2001;71:1365-6.

Millar BC, Moore JE. Antibiotic prophylaxis, body piercing and infective endocarditis. J Antimicrob Chemother 2004;53:123-6.



- Severe hemorrhage:
 - Hemophilia, anticoagulants, certain locations
- Hypovolemic shock due to posthemorrhage after tongue piercing
- Damage to spongy body of the penis, hemorrhage and malfunction



Hardee PS, Mallya LR, Hutchison IL. Tongue piercing resulting in hypotensive collapse. Br Dent J 2000;24:57-8.

- Piercing of the oral mucosa can cause fracture of the teeth
- Piercings may be swallowed or inhaled
- Speech, chewing, swallowing, breathing may be affected
- Rare cases:
 - Abscess of the tongue
 - Acute respiratory distress in hereditary angioedema
 - Split tongue



Krause HR, Bremerich A, Sztraka M. Complications following piercing in the oral and facial region. *Mund Kiefer Gesichtschir* 2000;4:21-4.

De Moor RJ, De Witte AM, De Bruyne MA. Tongue piercing and associated oral and dental complications. *Endod Dent Traumatol* 2000;16:232-7.

Olsen JC. Lingual abscess secondary to body piercing. *J Emerg Med* 2001;20:409.

- Ear piercing:
 - Hypertrophic scar, keloid
 - Chondritis, perichondritis, destruction of th cartilage
- Infections:
 - Pseudomonas
 - Lactobacilli were identified
- Lymphadenopathy
- Argyrosis



- **Bellybutton piercing:**

- Long healing time
- Local infection
- Liver abscesses



- **Nipple piercing:**

- Mastitis, infection of a breast implant
- Problems with breast-feeding



Jacobs VR, Golombeck K, Jonat W, et al. Mastitis nonpuerperalis after nipple piercing: time to act. *Int J Fertil Womens Med* 2003;48:226-31.

Martin J. Is nipple piercing compatible with breastfeeding. *J Hum Lact* 2004;20:319-21.

van Vugt ST, Gerritsen DJ. Liver abscess following navel piercing. *Ned Tijdschr Geneesk* 2005;149:1588-9.

- Piercing of the female genitalia:

- Inflammatory pelvic bowel disease, infertility
- Difficulties in delivery
- Strictures or fistulas
- Ruptures and splitting of the urethra

- Piercing of the male genitalia:

- Ascending infections and male infertility
- Erysipelas and Fournier gangrene
- Triggering of paraphimosis or priapism

Slawik S, Pearce I, Pantelides M. Body piercing; an unusual cause of priapism. *BJU Int* 1999;84:377.

Jones SA, Flynn RJ. An unusual (and somewhat piercing) cause of paraphimosis. *Br J Urol* 1996;78:803-4.

Ekelius L, Fohlmann J, Kalin M. The risk of severe complications of body piercing should not be underestimated. *Lakartidningen*. 102 (2005) 2560-2562, 2564.



THANK YOU