SCIENCE SECTION

Think Before You Ink

Humans have been marking their bodies since the Neolithic times. What has now evolved to be called tattooing has been growing and changing for hundreds of years. Science and medicine have also been evolving and new discoveries are being made daily. For the last couple of decades, modern medicine has discovered a lot of dangers that come along with the art of tattooing. Dangers in the past have come from the use of unsanitized needles that inject ink into the skin. However, most tattoo shops nowadays have very strict sanitation regulations. So, how are there still cases of infections at tattoo sites in patients today? The most simplified answer is that bacterial species are getting smarter. By smarter, I mean bacterial species are evolving in ways that make infections easier to get and harder to cure.

In 2015, a case study was conducted on a forty-two year old woman with a lesion on her tattoo site. According to the study, the woman had the lesion for over nine months and the lesion did not appear on her tattoo site until two years after the patient got the tattoo. The bacterial species that colonized and later caused the infection was *Mycobacterium abscessus*. The patient in this case was cured of the infection by taking clarithromycin pills for five months. In 2014, a twenty nine year old male developed a papular eruption on his tattoo site just fourteen to twenty one days after receiving the tattoo. Upon diagnosis, the infection was caused by the bacterium *Mycobacterium fortuitum*. Unfortunately, this infection showed some antibiotic resistance and had to be treated trimethoprim-sulfamethoxazole and ciprofloxacin for two months. In 2013, a study was done to try and understand what types of bacteria causes infections on tattoo sites. Out of twenty-six suspected bacterial infections on tattoo sites in the study, three of them were from *Mycobacterium abscessus* and two of them were from *Mycobacterium chelonae*.

Mycobacterium was not previously known to infect tattoo sites. However, more and more cases involving Mycobacterium are showing up in tattoo studies today. What about Mycobacterium could be causing it to now be a legitimate concern for tattoo parlors? Mycobacterium is a very slow growing and hardy bacteria that is best known for causing tuberculosis and leprosy. It is most commonly found in water including water that has been treated with chlorine. If someone got a tattoo and then later took a shower while their skin was still open from the tattoo procedure, Mycobacterium could get into the skin and later cause infection. The most common antibiotics used to kill Mycobacterium are clarithromycin and rifamycin.

 Further research on tattooing and Mycobacterium can lead to safer ways to get tattoos. Tattoos have been popular for decades and the safer people can get them, the better. Hopefully, more patients will be a part of the case studies mentioned above in order to help find ways to prevent this type of infection occurring in the future. For now, make sure the tattoo parlors that people you know use are up to date on the best sanitation practices.

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