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IN THIS ISSUE

Hair Transplant in the Age of MRSA

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The biggest threat to your practice is not a disruptive new surgical technology or medical treatment, it's MRSA. We live and practice medicine in the post-antibiotic era. Our field of elective hair transplant surgery is only possible due to the discovery of penicillin in 1928 by Alexander Fleming and the subsequent expansion of our biological warfare armamentarium. Without effective strategies to control the biological threats we live with, surgical intervention of any type is an inadvisable risk.

Now, like it or not, that existence is threatened by the very weapons we created. Worldwide, rates of antibiotic-resistant bacterial infections have steadily climbed, particularly in the past decade. In 2013, the U.S. Centers for Disease Control (CDC) categorized the threats based on level of concern: "urgent," "serious," and "concerning." The urgent threats are not commonly encountered in the normal course of a hair transplant surgery.[1] But, among the serious threats is a bacteria known as methicillin-resistant Staphylococcus aureus (MRSA), and it is a real and emerging threat in our specialty.[2]

HOW DID WE GET HERE? MRSA HISTORY LESSON

Staphylococcus (S.) aureus is ubiquitous on our skin and mucous membranes, and usually it does not cause any harm. It is estimated that 25%-35% of healthy humans carry S. aureus in this post-antibiotic era. It would be a mistake, however, to assume that S. aureus is benign. If you look at data from the pre-antibiotic era and into the 1940s, S. aureus bacteremia was usually fatal.[3]

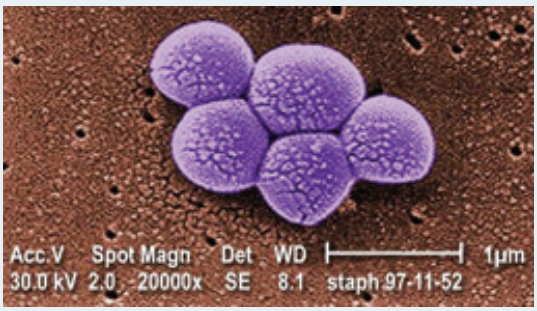
MRSA is the term that describes strains of S. aureus that have acquired antibiotic resistance either through overuse of antibiotics for inappropriate treatment indications (like treating a viral infection with antibiotics), or through incomplete treatment leading to the selection of antibiotic-resistant strains. Excessive perioperative antibiotic use by physicians also likely played a role in initiating these strains.

MRSA was first identified in the 1960s and at that time it was an iatrogenic infection; that is, it was typically found in hospitals, nursing homes, or isolated from medical personnel. Unless it gained access inside the body, a person's skin was an excellent barrier and his or her immune system was very good at fighting it off. Plus, if MRSA infected a patient, switching to an antibiotic that the strain still WAS susceptible to usually still cleared the infection.

In the late 1990s, the situation changed. This little bug moved from a healthcare-associated illness to one that can be acquired from one's community. Patients and medical personnel without active infection symptoms would carry the resistant strain outside of the hospitals and nursing homes. Individuals were commonly colonized in the nose and on the skin so a simple sneeze or touch of the hand could transmit the bacteria. The more the bacterial strains spread, the more the strains got the chance to develop resistance to new antibiotics, until one by one whole antibiotic classes started to fail. In 1999, we heard the first reports of children dying due to resistant MRSA infections.

Over the past 30 years, no new major antibiotics have been developed, so now we are down to our last effective treatments.[4] In 2002, the first reported case of vancomycin-resistant S. aureus in the United States (Figure 1) was

FIGURE 1. Magnified 20,000×, this colorized scanning electron micrograph (SEM) depicts a grouping of methicillin-resistant Staphylococcus aureus (MRSA) bacteria. *Photo credit: Public Health Image Library: https://www.cdc.gov/mrsa/community/photos/photo-mrsa-13.html*



PAGE 183

FORUM
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TABLE OF CONTENTS

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