

# Acquisition of MRSA through Oral Sex and Treatment of Carrier Status in a 22 year old male: a Case Report

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## Abstract

Methicillin resistant *Staphylococcus aureus* (MRSA) prevalence is rising in the community. Although most new infections are transmitted along known methods, there are reports of MRSA being sexually transmitted. When MRSA is sexually transmitted, it tends to be invasive and untreatable. In this case report, an otherwise healthy 22-year-old man acquired MRSA through oral sex. The patient was successfully treated with Mupirocin. Understanding of this novel form of transmission is important in containing and eradicating MRSA.

## INTRODUCTION

Community acquired Methicillin resistant *Staphylococcus aureus* (CA-MRSA), a major cause of cutaneous and systemic infection, is becoming increasingly prevalent. MRSA has posed major concerns in the hospital setting for years, and it is now on the rise not only in the hospitals but also in the community.<sup>1</sup> CA MRSA is common in day care centers, as well as within sports teams and military recruits.<sup>2</sup> Approximately one percent of the United States (US) population, about 2 million people, are asymptomatic carriers of MRSA. The CDC (Center for Disease Control) reports that people over the age of 65 are most likely to be effected due to a weakened immune system in this population.<sup>3</sup>

In the community, MRSA can be spread to healthy individuals from those with nasal and/or skin colonization. Previous case reports suggest poor personal hygiene and injection drug use as major risk factors for MRSA infection.<sup>4-6</sup> In this case report, an immunocompetent male is found to have nasal colonization with MRSA, which he acquired through heterogeneous sexual intercourse with a partner who had gluteal lesions previously diagnosed as MRSA. This case is preceded by only a few cases of sexually transmitted community acquired MRSA.<sup>7-9</sup>

Cook et al conducted a longitudinal community-based study and determined the presence of heterosexual transmission of CA MRSA in three households. Sexual partners developed skin infection in the pubic region and identical strains of CA

MRSA in sexual partners were found in two of three households. Sexual intercourse appears to be a relatively new and significant vehicle for the transmission of CA MRSA among family members and the rest of the community.<sup>2</sup> Sexual activity predisposes to known risk factors for infection, such as the presence of minor abrasions and exposure to open wounds.<sup>10-11</sup>

A study by Roberts JR et al reports two cases of CA MRSA in the emergency department transmitted by sexual intercourse. The first case was of a 35 year old immunocompetent male presenting with an abscess on his penis. He had a history of unprotected penile-vaginal intercourse with a woman who had pimples on her shaved pubic area. Culture of the penile abscess revealed growth of MRSA. This patient was treated by incision and drainage followed by trimethoprim-sulfamethoxazole. The second case was the first incident of oral-genital transmission to be reported. An immunocompetent 35-year-old female presented with two separate complaints of boils on her shaved vulvar area, both of which were MRSA positive. These boils appeared three days after oral-genital intercourse with her boyfriend, who was asymptomatic. Her boyfriend's throat culture was MRSA positive.<sup>12</sup>

## CASE REPORT

A 22 year-old immunocompetent male presented asymptomatic but requested a test for MRSA since his girlfriend, whom he recently had sexual relations with, had gluteal lesions, which were previously diagnosed as MRSA.

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A thorough physical exam revealed no abnormalities, but a nasal swab was taken and sent to the lab as a precaution. Within 5 days, the lab report came back positive for MRSA and Group B Streptococcus species. Presumably, the patient acquired MRSA through vaginal contact (i.e. oral sex), evidenced by the Group B colonization of nasal mucosa. In adults, Group B Strep is normally found in the genital tract, urinary tract, or gastrointestinal tract.<sup>13</sup> This patient had no other risk factors for MRSA infection, as he keeps good hygiene and is not involved in other high risk behaviours for MRSA infection (such as IV drug use).

The patient was given a prescription for Mupirocin 2% Ointment and Hibiclens. The patient was not given the specialized Bactroban (Mupirocin) Nasal 2% Ointment<sup>14</sup> since he could not afford it. Instead, he was given the conventional Mupirocin ointment. Duration of treatment was 5 days. The patient returned for follow up 7 days later. Laboratory tests showed that he was negative for MRSA. The five-day course of conventional Mupirocin was able to eradicate MRSA from this asymptomatic carrier.

### DISCUSSION

Awareness of the possibility of sexual transmission of MRSA is essential to containment of the organism. This case suggests that MRSA can be transmitted through oral sex. Research on the subject has shown that when MRSA is sexually transmitted, the isolates are unrecognizable strains and potentially invasive. In fact, this novel form of transmission may explain the ability of new strains to become established in the community.<sup>2</sup> Therefore, treatment of asymptomatic carriers who engage in high risk sexual activity should be prompt in order to prevent MRSA spread. In this case report, a five day course of topical Mupirocin proved effective for treatment of a MRSA carrier.

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