CASE REPORT

*Mycobacterium fortuitum* Infection Following Neck Liposuction: A Case Report

Daniel S. Behroozan, BS, Mary M. Christian, MD, and Ronald L. Moy, MD

University of California, Los Angeles, West Los Angeles VA Medical Center, Los Angeles, California

MYCOBACTERIUM FORTUITUM is considered a ubiquitous, rapidly growing atypical mycobacterium readily isolated from soil, water, domestic and wild animals, milk, and foods. Although originally believed to be a saprophyte, *M. fortuitum* has become rarely associated with human infections. Most commonly, reported clinical infections are postsurgical, cutaneous, or pulmonary. The rise in clinical significance and awareness of disease caused by this atypical mycobacterium may be partly attributed to improved laboratory identification of mycobacteria, as well as an increasing population of susceptible immunocompromised individuals. This report describes a case of cutaneous infection with *M. fortuitum* following neck liposuction, which to the authors' knowledge has not been reported to date.

Case Report

A 52-year-old woman presented for elective liposuction of the neck. All instruments were steam sterilized. The patient's neck was prepped with chlorhexidine, and 75 cc of fat aspirate was obtained. The patient tolerated the procedure well and was discharged home on cephalexin 500 mg orally twice a day for 5 days. One week after the procedure, the patient returned for routine follow-up and was without complaints. Visual examination revealed that the cannula site was healing well without erythema, edema, purulent discharge, or other signs of infection. Two months later, the patient returned complaining of a “lump” in the submental neck region and soreness upon neck movement. The patient denied fever, chills, weight loss, nausea, or vomiting. She was afibrile. Visual examination was significant for a 2.5-cm fluctuant, ill-defined subcutaneous, erythematous nodule in the midline submental region of the neck (Figure 1A). The nodule was mildly tender to palpation, but without warmth to the touch. The patient was clinically diagnosed with a seroma and the region was prepped with chlorhexidine. Needle aspiration was performed and 1.25 cc of serosanguinous fluid was obtained.

The patient returned biweekly for repeat aspirations that continued to reveal similar volumes of serosanguinous fluid. Three months after the procedure, the patient returned with the same presentation, but aspiration obtained 2.5 cc of bloody, purulent fluid which was sent for bacterial culture. The culture grew out coagulase-negative *Staphylococcus*, and the patient was restarted on cephalexin 500 mg orally twice a day for 3 weeks. The patient returned 6 weeks following this visit with moderate clinical improvement as the nodule had slightly decreased in size. The nodule was aspirated again, and 3 cc of purulent discharge was obtained and sent for bacterial culture and acid-fast stain. Acid-fast stain revealed a heavy growth of acid-fast bacilli, and the cultures grew out *M. fortuitum* sensitive to amikacin, ciprofloxacin, doxycycline, trimethoprim-sulfamethoxazole, tobramycin, clarithromycin, and imipenem. The patient was treated with oral clarithromycin 500 mg twice a day for 1 month, ciprofloxacin 750 mg twice a day for 1 month, and minocycline 100 mg twice a day for 2 weeks. Within 6 weeks, the nodule had resolved completely without further complications, and the patient was happy with the final result (Figure 1B,C).

Discussion

*M. fortuitum* has been characterized as a rapidly growing mycobacterium because it is capable of producing colonies on culture within 3–7 days, but even with special stains acid-fast bacilli are seen in less than one-third of cultures studied. There are three biovariants of *M. fortuitum*, and common to all is that they are able to reduce nitrates and to take up iron. The most common biovariant, *M. fortuitum fortuitum*, does not grow on inositol, mannitol, or sodium citrate. *M. fortuitum perregrinum* grows only on mannitol. Lastly, the third currently unnamed biovariant contains two isolates that are both able to grow on inositol and mannitol; one isolate is sorbitol positive while the other is sorbitol negative.

As described above, most reported clinical infections caused by *M. fortuitum* are postsurgical, cutane-
been described as manifesting in various ways including abscesses, ulcerations, cellulitis, or even draining sinus tracts.\textsuperscript{10–11}

Cutaneous infections with \textit{M. fortuitum} have been described as resembling pyogenic abscesses, often with either acute inflammation and suppuration or chronic with inflammation, ulceration, and exudates.\textsuperscript{3} The course of infections can be rather variable. While in most patients infections tend to be chronic in nature, in others they may remain stable for prolonged periods. Since spontaneous recovery is rare, an effective therapy must be implemented to resolve the infection. In the clinical setting, antibiotic therapy is the treatment of choice for a localized cutaneous infection. Although to the authors’ knowledge no controlled trials have been conducted to define the optimal antibiotic treatments for the \textit{M. fortuitum} biovariants, recent reports have delineated treatment options.\textsuperscript{3,5,12}

In general, the \textit{M. fortuitum} biovariants are all susceptible to treatment with amikacin, imipenem, quinolones, and sulfonamides,\textsuperscript{5} and empiric treatment should include these medications if susceptibility testing is not available or if laboratory differentiation between biovariants is not performed. Susceptibility to other pharmacologic agents differs between \textit{M. fortuitum} biovariants and should be adjusted based on culture susceptibility results if possible. Other therapeutic agents used with varying efficacy have included clarithromycin, cefoxitin, doxycycline, and minocycline. Treatment for uncomplicated cutaneous lesions with oral antibiotics should be continued for 1–3 months or until resolution of symptoms and should include therapy with two or more drugs in order to avoid development of drug resistance. Medications should be adjusted and individualized to each patient based on laboratory sensitivity testing of cultured organisms. Surgical debridement and drainage is often beneficial. More disseminated infection may necessitate a greater number of antibiotics, intravenous administration, and a longer treatment time.

This report documents a unique cause of cutaneous infection with \textit{M. fortuitum} following neck liposuction which responded well to oral antibiotic treatment. Diagnosis of cutaneous disease caused by atypical mycobacteria such as \textit{M. fortuitum} can be difficult in the clinical setting, especially due to the relative lack of experience of most physicians with these organisms. Further studies are necessary to elucidate optimal treatment regimens.

References
