Mixed Infection of an Atypical *Mycobacterium* and *Aspergillus* Following a Cryopreserved Fat Graft to a Face

Seong Kee Kim, MD, *†* Han Joon Kim, MD, * and Kun Hwang, MD, PhD *‡*

**Abstract:** We report a chronic infection of a patient who received a cryopreserved fat graft on her face. A 22-year-old female patient presented with multiple abscesses of her face. Four months previously, she received a second fat graft with the fat harvested at a previous surgery which was cryopreserved for 2 months. On examination, she had tender erythematous nodules on both cheeks. A computed tomography of her neck showed multiple peripheral enhancing nodular lesions. In an open pus fungus culture, *Aspergillus fumigatus* growth was observed. On the *Mycobacterium Other Than Tuberculosis* identification PCR, *Mycobacterium fortuitum* was found. She was treated with levofloxacin, clarithromycin, and minocycline for 11 months, and finally the symptoms subsided. To avoid infection after the fat graft, cryopreserved fat should not be used as a possible grafting material. In cases of persistent infection, or in cases of waxes and gains after drainage of pus and short-term antibiotics therapy, atypical *Mycobacterium* or *Aspergillus* should be suspected and a PCR for them should be carried out.

**Key Words:** Mycobacterium infections, nontuberculous, *Aspergillus fumigatus*, transplant, lipectomy, cryopreservation

---

**FIGURE 1.** Schema of the 22-year-old female patient on first hospital visit. Note erythematous nodules on both cheeks.

**FIGURE 2.** Computed tomography of neck. Multiple peripheral enhancing nodular lesions on forehead, both cheeks, and the right nasolabial area are shown.

---

A 22-year-old female patient presented with multiple abscesses of her face. Six months previously, she had a structural fat graft to her forehead, right cheek, right nasolabial fold, and chin at a local clinic (Fig. 1). Two months after the initial graft, she underwent a second fat graft with the fat harvested from her previous surgery, and this fat was cryopreserved for 2 months. She reported painful swelling and erythema 4 weeks after the secondary fat graft. For 2 months, she was treated with cephalosporin, ciprofloxacin, and metronidazole at the local clinic, but the inflammation repeatedly waxed and gained. Two weeks prior to admission, isoniazid and rifampicin were added to her regimen. From 1 month ago, pus has appeared from her forehead, but no growth of bacteria has been reported from the pus culture (Fig. 2).

On examination, she had tender erythematous nodules on both cheeks. All initial blood investigations were within normal limits. A computed tomography of her neck showed multiple peripheral enhancing nodular lesions to her forehead, both cheeks, and her right nasolabial area compatible with abscesses.

She was admitted and amikacin, cephalosporin (cefoxitin), and clarithromycin were prescribed and a regimen started. In an open pus fungus culture, *Aspergillus fumigatus* growth was observed. An open pus acid-fast bacilli culture returned positive. The antibiotics were changed to rifampicin, levofloxacin, clarithromycin, and doxycycline, and she was discharged.
On the Mycobacterium Other Than Tuberculosis identification PCR, *Mycobacterium fortuitum* was found.

On an outpatient basis, incisions and drainage were performed to remove fluid collection at the mouth corner and a jellylike material was removed. She was treated with levofloxacin, clarithromycin, and minocycline for 11 months, and finally the symptoms subsided (Fig. 3).

**DISCUSSION**

This is a very rare case of a mixed infection of *M. fortuitum* and *A. fumigatus* following a cryopreserved fat graft to a face. In the literature, only 3 cases of atypical mycobacterium infections have been reported following a fat graft; they were on a hand, a leg, and a buttock.1-3 Our case is the first case of an atypical mycobacterium infection of a face following a fat graft. Several papers have reported an *Aspergillus* infection following a vascular graft.4-8 Following a fat graft, however, no cases of *Aspergillus* have been reported. Our case is the first case of an *Aspergillus* infection following fat graft.

Kim warned of the risk of cryopreservation of fat by culturing cryopreserved fat. Among the 150 cryopreserved fat samples, cultures were positive for *Staphylococcus epidermidis* in 5 samples and *Micrococcus* species in 3 samples.9

We believe that the cryopreservation of fat suppresses bacteria or fungi; yet, during the melting procedure, the microorganisms may grow faster.

In order to avoid infection after a fat graft, cryopreserved fat should not be used as a possible material. Aseptic technique as well as sterilization of the instruments of the fat harvest is important.

Postoperative dressings and follow-ups are necessary.

Because *S. epidermidis* and *Micrococcus* species are most frequently a causative agent, antibiotic treatments covering these bacteria should be started when infection first appears following a fat graft. Abscesses should be drained, and cultured for regular and common bacteria, acid-fast bacilli, and fungi. Computed tomography might be helpful to assess the severity of the infection and

---

**FIGURE 3.** Case summary. Ceph. indicates cephalosporin; Cipro., ciprofloxacin; Met., metronidazole; INH, isoniazid; Rif., rifampicin; Ami., amikacin; Cla., clarithromycin; Lev., levofloxacin; Dox., doxycycline; Min., minocycline.

**FIGURE 4.** Treatment algorithm of the infection following fat injection. Infection sign indicates painful swelling, erythema, abscess etc.; I&D, incision and drainage; M. tuberculosis, *Mycobacterium tuberculosis*; MOTT, Mycobacterium Other Than Tuberculosis.
abscess cavities. In cases of persistent infection, or waxes and gains after drainage of pus and short-term antibiotics therapy, atypical *Mycobacterium* or *Aspergillus* should be suspected and a PCR for them should be carried out (Fig. 4).

**ACKNOWLEDGMENT**

This work was supported by the grant from Inha University (Inha Research Grant).

**REFERENCES**