

Nontuberculous Mycobacterium Eyelid Infection after Cosmetic Blepharoplasty : A Case Report

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Abstract

Objective: To report a rare nontuberculous mycobacterium eyelid infection after cosmetic blepharoplasty.

Material and method: A case report of a 40-year-old Cambodian woman who came for an examination with red, swollen lumps and slight pain on both eyelids after undergoing cosmetic blepharoplasty one month previously. The patient was managed with urgent incision and curettage.

Result: Pus culture was positive for Mycobacterium abscessus. The patient was admitted to the hospital for antibiotics and nonabsorbable sutures were removed on the eyelid. After more than a month of treatment in the hospital, the patient was discharged. A month later, the red, swollen lump recurred on the right eyelid, and the patient was admitted for antibiotics and incision and curettage. After the hospital admission, the patient was given a different dose of antibiotics and recovered well within a month. The patient was then released from the hospital and was followed up a month later. There were no abnormal symptoms, and the lumps were not found on the eyelid.

Conclusions: Nontuberculous mycobacterium eyelid infection after cosmetic blepharoplasty is rarely found. The symptom needs complex and prolonged treatment because the bacteria grows slowly and responds to various medicines. Incision and curettage and microbiological analysis were the initial management methods, as well as a timely consult from infectious diseases specialists. The appropriate treatment.

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Introduction

Nontuberculous Mycobacterium can be divided into two groups, which are Rapid Growing Group -- consists of Mycobacterium abscessus, Mycobacterium fortuitum, Mycobacterium chelonae and Slow Growing Group -- consists of Mycobacterium marinum, Mycobacterium avium complex (MAC), Mycobacterium scrofulaceum, Mycobacterium haemophilum, Mycobacterium intracellulare. Nontuberculous Mycobacterium usually cause infections in the skin, lungs, or in lymph nodes. Skin infection can be found

in every part of the body. From the study by Manasmon Chairatchaneeboon et al (2018)⁴, the most common cutaneous sites included legs, head, and neck, respectively. The primary cause of infection is usually from an accident and the secondary cause is post surgery.

In particular, Rapid growing Nontuberculous Mycobacterium groups such as Mycobacterium chelonae, and Mycobacterium abscessus often cause chronic infection of skin or soft tissue, with clinical features of which are localized abscess formation, chronic ulcers, erythematous plaque, and if in patients. An immunocompromised host may also cause disseminated infections. Incision to drain the pus out with the administration of antibiotics. In a study by Daniel Z. Uslan (2006)⁶ reported that patients with Rapidly Growing Mycobacteria in the skin and soft tissues were given a variety

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of antibiotics, such as amikacin, cefoxitin, ciprofloxacin, clarithromycin, doxycycline, imipenem, linezolid, sulfamethoxazole, and tobramycin. Minimum inhibitory concentrations (MICs) are done to help select the appropriate antibiotic for the patient.

From the literature review, it was found that Nontuberculous Mycobacterium eyelid infection occurred rarely, especially after a surgery¹³, the infection found after blepharoplasty were mostly from Staphylococcus group of germs^{3,9}.

Case Report

A 40-year-old Cambodian female company employee provided a history that she had undergone cosmetic blepharoplasty at a cosmetic surgery clinic two months previously. About one month after the surgery, red swollen lumps started to grow on her eyelids, and she went to the same clinic for a checkup. The doctor prescribed her Amoxicillin-clavulanate and Clindamycin oral antibiotics. A week after taking the antibiotics, she went for a follow-up as the symptoms remained unimproved. Subsequently, the doctor performed incision and curettage, and changed the antibiotics to 2-gram Ceftriazone injection once a day, together with Ciprofloxacin tablet twice a day. On the follow-up five days after, the red, swollen lump on the left eyelid got smaller, but the one on the right eyelid remained unchanged. (Figure 1)

The patient was then transferred to a medical university hospital. At the admission, the patient was undergone incision and curettage and the pus was sent for laboratory investigation. After Ziehl-Neelsen acid fast stain, Acid fast bacilli 3+ was found (Figure 2). The patient was given Imipenem 500 mg intravenous every six hours, Amikacin 750 mg intravenous once a day, Ciprofloxacin 500 tablet twice a day and Azithromycin 500 mg tablet once a day. The antibiotic dosage was then re-evaluated where Imipenem and Azithromycin were changed to Cefoxitin 2 grams injection every six hours and Doxycycline 100 mg oral twice a day. After that, the patient was sent for incision and curettage and nonabsorbable sutures on the

eyelid were removed. The pus from the surgery was taken to PCR test, the result was positive for Nontuberculous Mycobacterium and it was then sent to culture. Mycobacterium abscessus was found. The patient stayed was admitted for one month to complete the antibiotics course and responded well. The patient was then discharged from the hospital and was followed up at an outpatient clinic where she was administered Amikacin 750 mg injection once a day, 3 days per week. She was also prescribed Ciprofloxacin 500 mg tablet to take twice a day and Azithromycin 500 mg tablet to take once a day continually at home.

A month after discharged, the patient came to the hospital for a follow-up. The red, swollen lump recurred on the right eyelid. The antibiotics were then adjusted to Amikacin 750 mg intravenous once a day, Ciprofloxacin 500 mg tablet twice a day, Azithromycin 500 mg tablet once a day and Linezolid 600 mg tablet once a day. After taken the antibiotics for two weeks, the patient stopped taking the Linezolid due to side effects.

A month later, the patient reattended follow-up, and was found to have a small, red, tender, and swollen lump on the right eyelid. The patient was then admitted for incision and curettage and laboratory investigation and was given Amikacin 750 mg intravenous once a day, Imipenem 500 mg intravenous every six hours, Ciprofloxacin 500 mg tablet twice daily Azithromycin 500 mg tablet once daily. After one month of taking antibiotics in the hospital, the culture results were negative, and the patient got better. Red, swollen lumps were not found on the eyelid. She was then discharged and was told to go and take Amikacin 750 injection once daily at any hospital near home. The patient was given Ciprofloxacin and Azithromycin tablet to take at home.

In the subsequent follow-up, the patient was found to be asymptomatic and the red swollen lumps were resolved. Amikacin intravenous were reduced to three times per week, and the doctor scheduled periodic follow-ups to prevent from reinfection. (Figure 3)



Figure 1 The red, swollen lumps on the patient's eyelids

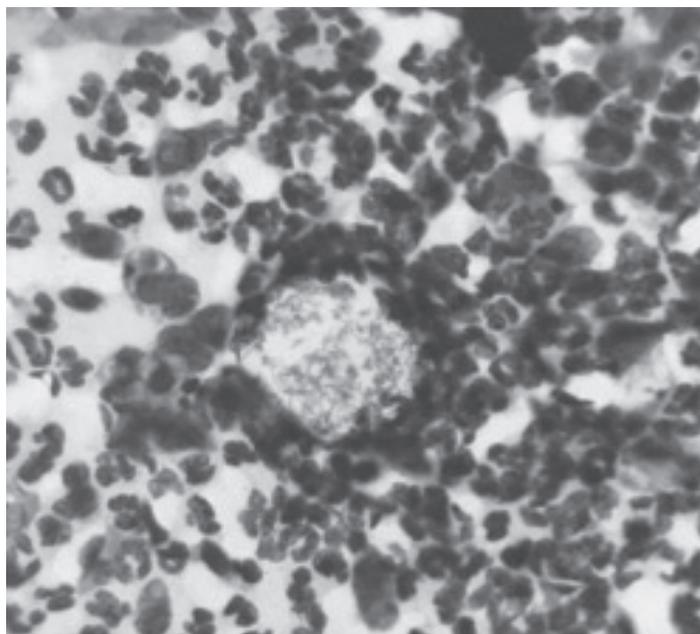
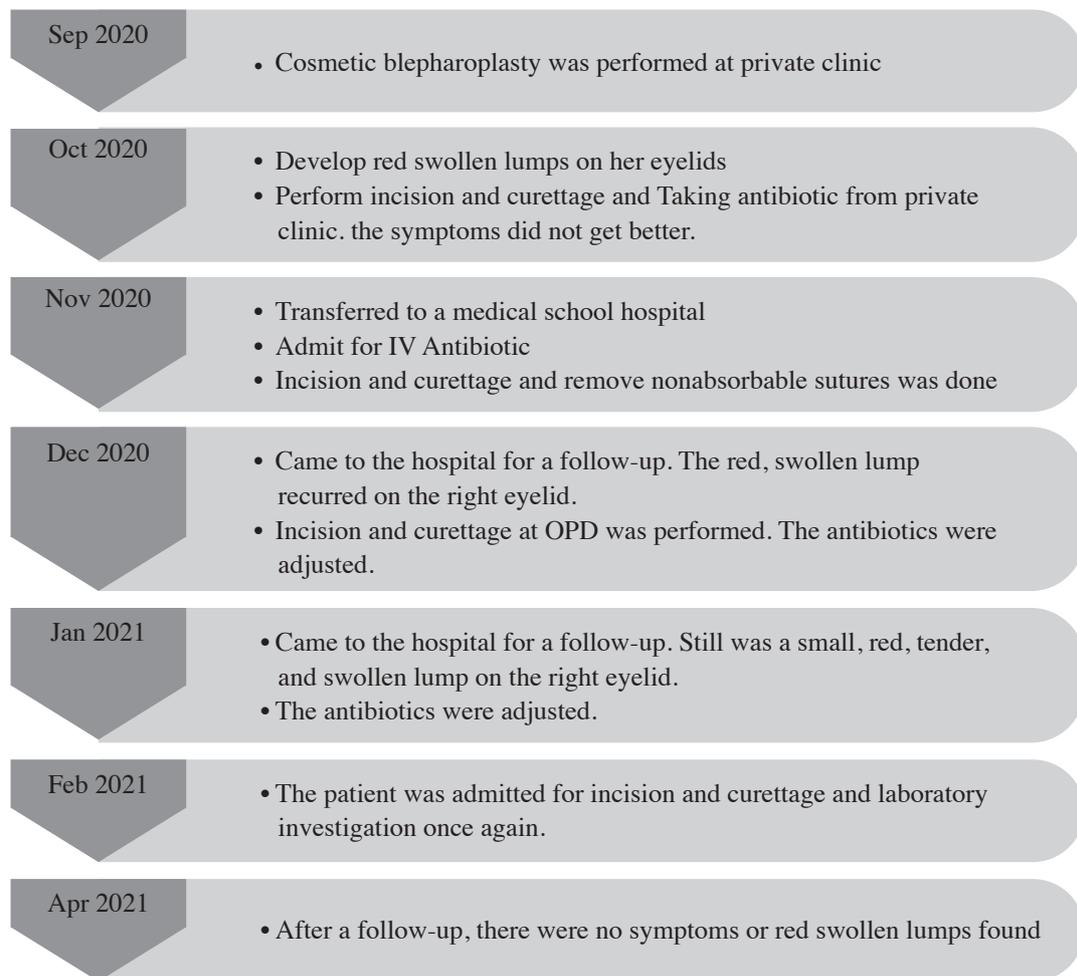


Figure 2 The patient's pus after Ziehl-Neelsen acid fast stain, Acid fast bacilli 3+ was found.



Discussion

Blepharoplasty is currently a popular surgery, both for managing pathologies of eyelids and for aesthetic purposes. The surgery is not very complicated and usually provides good results after the surgery, but the complications are not common.

One of the complications that can be found is infection post-operatively. Carter et al (2003)³ had studied and found that the incidence of infection after blepharoplasty was 0.2 percent. The germs that cause infection were mostly *Staphylococcus aureus* or group A B-hemolytic *Streptococcus*, which the infection can be treated by prescribing the proper antibiotics, resulting in a positive outcome.

Nontuberculous *Mycobacteria* is a microorganism that causes skin infection and can

be found in infection of incision after surgery. However, the incidence is quite low, which is less than 3 per cent of all cases with infected incised wound after surgery.⁹

Shin et al (2019)¹³ reported a case of a 37-year-old female patient, whose lumps grew on the eyelid three months after blepharoplasty, was sent to a surgery to remove the lumps and found *M. Septicum* on the lab test. She was then admitted to hospital and was given levofloxacin and clarithromycin for six months. There was a one-year follow-up after removing the lumps and taking antibiotics, no reinfection was found.

Wong et al (2013)⁹ reported a case of a 60-year-old female patient who came to the hospital with red swollen lump and pain on the eyelid six weeks after blepharoplasty. She was sent for incision and curettage; pus was found

inside. The pus was sent for AFB, Bacteria, Fungus stain test, the results were negative. Surgical pathology was then made, suppurative and granulomatous dermatitis was found. The presumption was mycobacterium infection, so the doctor gave the patient clarithromycin for four months. The patient subsequently recovered well at the six-month follow-up period., together with consulting infectious diseases-specialized doctors for treatment plan, which makes the Crosswell et al (2014)⁷ reported a case of a 65-year-old female patient who came to the hospital with red swollen lump on the eyelid and purulent drainage three months after blepharoplasty. The pus was sent for culture and was positive for *M. fortuitum*. After antimicrobial susceptibility testing, the result was that the disease was resistant to clarithromycin and macrolide group of medicine, so the doctor gave doxycycline, which was in tetracycline group. The patient was given doxycycline for three months, and the disease was recovered. No reinfection was found at the six-month follow-up.

From the literature review aforementioned, nontuberculous mycobacterium eyelid infection after cosmetic blepharoplasty is rarely found. The infection is usually insidious and occurs in months. The antibiotics for treatment vary, however, many authors have recommend multi-antibiotic combination as empirical treatment which is readjusted after the results of the susceptibility test. As this infection takes time to recover, it is important to diagnose this disease to get the right treatment and good outcome.

Optimal treatment of rapidly growing mycobacterial infections remains poorly established. No study has compared different

antimicrobial regimens, to our knowledge. Current guidelines recommend susceptibility testing of all isolates, with the use of empirical therapy suggested until susceptibilities are known.

Mycobacterial infections of the skin and subcutaneous tissue are associated with important stigma, deformity, and disability. Rapidly growing mycobacteria, including the Mycobacterium abscessus group, *Mycobacterium chelonae*, and *Mycobacterium fortuitum*, are increasingly recognized pathogens in cutaneous infections associated particularly with plastic surgery and cosmetic procedures. Additionally, histopathological evaluation of tissue biopsy, cultures of tissue specimens and material obtained from draining lesions may be useful in identifying pathogen. Molecular assays (16S rRNA gene sequencing, PCR analysis, and high-performance liquid chromatography) are useful in some cases. The treatment for cutaneous mycobacterial infections depends on the specific pathogen and therefore requires a careful consideration of antimicrobial choices based on official treatment guidelines.

Conclusion

Nontuberculous mycobacterium eyelid infection after cosmetic blepharoplasty is rarely found. The symptom needs complex treatment because the bacteria grows slowly and responds to various medicines. It needs a long time to use medicines for the treatment. For an effective treatment, incision and curettage along with microbiological analysis is crucial along with a definitive diagnosis of the causative pathogen.

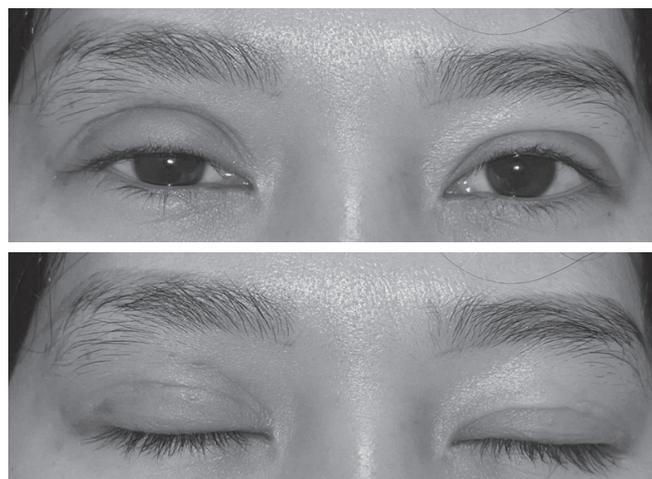


Figure 3 Treatment results after incision and curettage and removal of eyelid sutures along with administration of antibiotics.

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