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# Devastating sight and life-threatening laser blepharoplasty complications

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## Abstract

A 53-year-old woman was referred to our centre by a private aesthetic clinic. She presented with bilateral severe periorbital swelling and reduced visual acuity in her left eye for three days prior to presentation. She had undergone CO<sub>2</sub> laser blepharoplasty one week prior to assessment. Ophthalmic examination revealed periorbital swelling in both eyes with pouring pus discharge from the lower lid as well as underlying erythematous and ulcerative skin. There was limitation of extraocular muscle movement and conjunctival chemosis. Right-eye vision was 6/9, left-eye vision was counting fingers secondary to anterior segment inflammation. No sign of optic nerve involvement was noted. Computed tomography findings showed rim-enhancing preseptal collections with air pockets bilaterally involving the lower eyelids and measuring 2.6 x 4.3 x 2.7 cm on the left and 2.3 x 4.2 x 2.8 cm on the right with an extension of the collection into the lateral extra-conal region. She was treated as bilateral orbital cellulitis secondary to postsurgical infection. The patient underwent incision and drainage and started with systemic antibiotics promptly. She showed significant improvement after treatment. This is an unusual complication from cosmetic surgery in which delayed treatment can lead to sight- and life-threatening complications.

*Keywords:* bilateral orbital cellulitis, CO<sub>2</sub> laser blepharoplasty, eyelid, postsurgical infection

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# Komplikasi teruk laser blefaroplasti yang mampu mengancam penglihatan dan nyawa

## Abstrak

Seorang wanita berusia 53 tahun dirujuk ke pusat kami oleh klinik estetik swasta. Dia mengalami pembengkakan periorbital kedua-dua belah mata yang teruk dan pengurangan ketajaman penglihatan di mata kirinya selama tiga hari sebelum ini. Dia telah menjalani laser karbon dioksida blefaroplasti seminggu sebelum itu. Pemeriksaan oftalmik menunjukkan pembengkakan periorbital di kedua-dua mata dengan lelasan nanah dari kelopak mata bawah serta terdapat radang dan ulseratif pada kulit. Pergerakan otot ekstraokular adalah terhad dan terdapat kemosis pada konjunktiva. Penglihatan mata kanan adalah 6/9, dan mata kiri cuma kiraan jari akibat keradangan segmen anterior. Tidak ada tanda-tanda penglibatan saraf optik. Imbasan CT menunjukkan terdapat koleksi pada preseptal rim dengan poket udara pada kedua mata melibatkan kelopak mata bawah, berukuran 2,6 x 4,3 x 2,7 cm di sebelah kiri dan 2,3 x 4,2 x 2,8 cm di sebelah kanan dengan koleksi merebak ke kawasan ekstrakonal. Dia dirawat sebagai selulitis orbital pada kedua mata akibat komplikasi jangkitan pasca pembedahan. Pesakit menjalani pembedahan segera dan menerima antibiotik sistemik. Dia menunjukkan tindakbalas yang baik selepas rawatan. Komplikasi sebegini jarang berlaku ekoran dari pembedahan kosmetik di mana jika tidak mendapat rawatan awal ia boleh menyebabkan komplikasi penglihatan dan mengancam nyawa.

*Kata kunci:* jangkitan pasca pembedahan, kelopak mata, laser blefaroplasti karbon dioksida, selulitis orbital

## Introduction

Lower lid laser blepharoplasty is a surgical procedure performed with carbon dioxide laser (CO<sub>2</sub>) in which excessive skin or fat tissue is removed. Postoperative infections after blepharoplasty are a rare complication. Approximately 0.2% of infections post blepharoplasty have been reported.<sup>1,2</sup> This is the first reported case of bilateral periorbital abscess secondary to laser blepharoplasty in Malaysia.

## Materials and methods

Case report.

## Case report

A 53-year-old Chinese woman with no underlying medical comorbidities was referred to us by a private aesthetic clinic with bilateral severe periorbital swelling and reduced visual acuity in her left eye for three days. She had undergone lower eyelid laser blepharoplasty with UltraPulse CO<sub>2</sub> laser (Coherent, Dieburg, Germany) at the referring clinic one week prior to presentation. Ophthalmic examination revealed periorbital swelling in both eyes with pouring pus discharge from the lower lid as well as underlying erythematous and ulcerative skin (Fig. 1). Extraocular muscle movement was limited due to generalized severe conjunctival chemosis. Visual acuity in the right eye was 6/9 and counting fingers in the left eye. Intraocular pressure for both eyes were normal. Anterior segment findings in the right eye were normal, but the left eye showed significant inflammation with cornea oedema. The relative afferent pupillary defect was negative and there was no sign of optic nerve compression.

A computed tomography (CT) scan of the orbit showed rim-enhancing preseptal collections with air pockets involving the lower eyelids with an extension of the collection into the lateral extra-conal region bilaterally (Fig. 2). The patient was treated as periorbital and preseptal abscess complicated with orbital cellulitis secondary to postsurgical infection.

The patient underwent incision and drainage of both lower lids abscesses and started systemically on intravenous ceftriaxone 1 gm daily. Topically she was given gutt ciprofloxacin QID in both eyes and hypertonic saline 3% every four hours in the

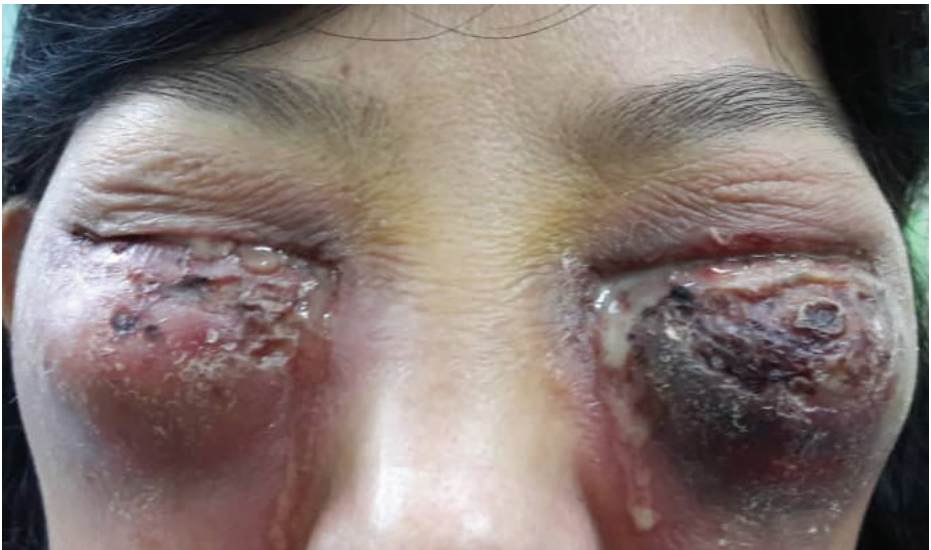


Fig 1. Periorbital lid swelling in both eyes with pus discharge.

left eye. Gutt Pred Forte (Allergan, Dublin, Ireland) was started for the left eye on the third day of admission. She showed significant improvement with treatment, with resolved minimal periorbital skin discolouration and final vision of 6/9 in both eyes (Fig. 3).



*Fig 2.* Arrows show bilateral periorbital pus collection in CT scan.



*Fig 3.* Hyperpigmented lesion with periorbital scarring post-treatment.

## Discussion

Lower lid blepharoplasty is performed by excising skin and excessive subcutaneous fat in the lower eyelids in order to restore and improve anatomical appearance. The surgery can be performed by a transconjunctival or infraciliary approach.<sup>3</sup> There are two widely applied methods for performing this procedure: the traditional method, which uses blades to perform the incision and excision, and the new advanced method, which uses the CO<sub>2</sub> laser technique.

Postoperative infection in blepharoplasty is a rare occurrence. Based on a study performed at the Phillips Eye Institute in Minneapolis (MN, USA), of a total of 2,227 patients who underwent blepharoplasty from January 1999 to December 2004, there was only one case (0.04%) of postoperative infection reported.<sup>2</sup>

Preseptal cellulitis is an infection that involves the periorbital fat tissues which are localized anterior to the orbital septum.<sup>4</sup> Delayed treatment may lead to a periorbital abscess, the spreading of which may in turn lead to involvement of the orbit, brain, and even organs at a systemic level.<sup>4</sup>

Factors that contribute to postoperative infection or surgical site infection include the patient's background health status, method and type of surgery performed, and clinical interventions provided to patients throughout medical care.<sup>5</sup>

In our case report, the patient underwent laser blepharoplasty in an aesthetic private clinic and the procedure was conducted by a general practitioner. The procedure was performed as an office-based surgery. She was not prescribed antibiotics postoperatively as a prophylaxis measure. In a study carried out in North Texas Ophthalmic Plastic Surgery Hospital (Fort Worth, TX, USA), only 0.26% of post-blepharoplasty patients who were prescribed with Bacitracin ointment recorded infections, while 6.3% patients that were not prescribed antibiotics developed infections.<sup>6</sup> These results support the idea of using antibiotics to prevent postoperative infections.

In Malaysia, this procedure is being performed widely by general doctors in aesthetic clinics with no background ophthalmological knowledge or experience. The current situation has caused a surge of patients being referred to ophthalmology centres once complications occurred. This practice has to be re-evaluated and strict rules need to be implemented to assure that effective interventions are in place for all patients that are planned for lid blepharoplasty. Proper surveillance may help reduce complications from this procedure.

## Conclusion

Periorbital abscess and orbital cellulitis are rare complications of simple cosmetic laser blepharoplasty surgery, but delayed treatment can lead to sight- and life-threatening complications.

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## References

1. Carter SR, Stewart JM, Khan J, et al. Infection after blepharoplasty with and without carbon dioxide laser resurfacing. *Ophthalmology*. 2003;110(7):1430-1432
2. Lee EW, Holtebeck AC, Harrison AR. (2009). Infection rates in outpatient eyelid surgery. *Ophthal Plast Reconstr Surg*. 2009;25(2): 109-110.
3. Trelles MA. Sight lost after lower lid laser blepharoplasty. *Ann Plast Surg*. 2000;45(6):678-679
4. Lee S, Yen MT. (2011). Management of preseptal and orbital cellulitis. *Saudi J Ophthalmol*. 2009;25(1):21-9.
5. Ferneini EM, Halepas S, Aronin SI. Antibiotic Prophylaxis in Blepharoplasty: Review of the Current Literature. *J Oral Maxillofac Surg*. 2017;75(7):1477-1481.
6. Alford M. Infection rates comparing topical antibiotic versus antibiotic free ointment in blepharoplasty surgery. *Am J Cosm Surg*. 2015;32:149-153..