Unilateral conjunctival ulcer due to *Stenotrophomonas maltophilia* infection

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We report a case of unilateral conjunctival ulcer due to *Stenotrophomonas maltophilia* infection in an immunocompetent individual. A 44-year-old male presented with complaints of pain and yellowish discharge in the right eye for one week. Patient underwent complete ophthalmic evaluation and relevant laboratory investigations. Anterior segment examination revealed localized conjunctival and episcleral congestion with conjunctival ulceration on the bulbar conjunctiva in the right eye. Gram's stain revealed gram-negative bacilli. Culture and sensitivity revealed *S. maltophilia* and responded well to topical moxifloxacin with systemic co-trimoxazole therapy.

Key words: Conjunctival ulcer, conjunctivitis, *Stenotrophomonas maltophilia*

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Stenotrophomonas maltophilia is an aerobic, motile, nonfermentative, nonsporulating, gram-negative bacillus, previously known as *Pseudomonas maltophilia* or *Xanthomonas maltophilia*[1] *S. maltophilia* has been reported to cause several systemic infections such as bacteremia, pneumonia, urinary tract infection, endocarditis, meningitis, peritonitis, and even ocular infections.[2]

The ocular infections that have been reported include conjunctivitis, keratitis,[3] dacryocystitis,[3] preseptal cellulitis and endophthalmitis.[3,4] We report for the first time a case of unilateral conjunctival ulcer due to *S. maltophilia*.

Case Report

A 44-year-old male presented with complaints of pain and yellowish discharge in the right eye for one week. He suggested that he may have been infected by his family members or neighbors, all of whom had conjunctivitis. On examination, the best corrected visual acuity was 20/20 with full extraocular movements in both eyes. Anterior segment examination of the right eye revealed localized conjunctival and episcleral congestion in the temporal quadrant with an adjacent area of conjunctival ulceration on the bulbar conjunctiva [Fig. 1] and fluorescein stain was positive. The rest of the anterior segment and the posterior segment of the right eye were normal and so was the left eye.

Conjunctival scraping was obtained from the ulcer under topical anesthesia and was subjected to Gram's stain, KOH preparation, and acid-fast stain. Gram's staining revealed the presence of gram-negative bacilli [Fig. 2], while both KOH and acid-fast stain revealed no fungal or bacterial elements. Patient was empirically started on topical moxifloxacin and tobramycin.

After 24 hours of incubation, confluent growth of gram-negative bacilli with smooth, glistening yellow colonies was observed on both blood [Fig. 3] and chocolate [Fig. 4] agar. The organism was identified as *S. maltophilia* (>100 CFU/100 μl) using Mini API ID 32GN strips (BioMérieux,New Delhi, India). This was also confirmed by negative oxidase, positive catalase, positive α-glucose, positive β-glucose, positive α-maltose, positive α-galactose, positive lipase, positive malonate, positive oxidative fermentative maltose, and negative oxidative fermentative mannitol tests. We were unable to perform lysine decarboxylase test and genotyping in our case.

Susceptibility testing was performed against ampicillin/sulbactum, amoxicillin, amoxy/clavulanic acid, pipercillin, pipercillin/tazobactum, ceftizidime, cefazolin, amikacin, tobramycin, gentamicin, ofloxacin, norfloxacin, ciprofloxacin, gatifloxacin, lomefloxacin, moxifloxacin, chloramphenicol, and co-trimoxazole by the Kirby–Bauer disk diffusion method. The organism was resistant to aminoglycosides (amikacin, tobramycin, and gentamicin) and sensitive to quinolones (ciprofloxacin, norfloxacin, ofloxacin, gatifloxacin, moxifloxacin, except lomefloxacin) and co-trimoxazole.

Figure 1: Localized conjunctival and episcleral congestion with conjunctival ulceration on the bulbar conjunctiva in the right eye

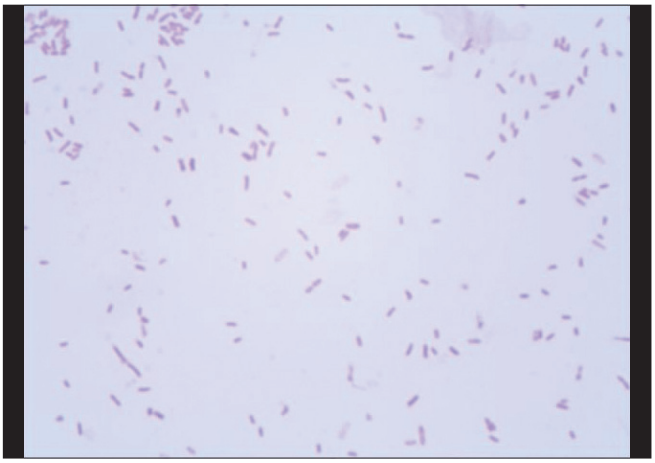

Figure 2: Gram's stain showed the presence of gram-negative bacilli

Figure 3: Confluent growth of gram-negative bacilli with smooth, glistening yellow colony was observed on blood agar

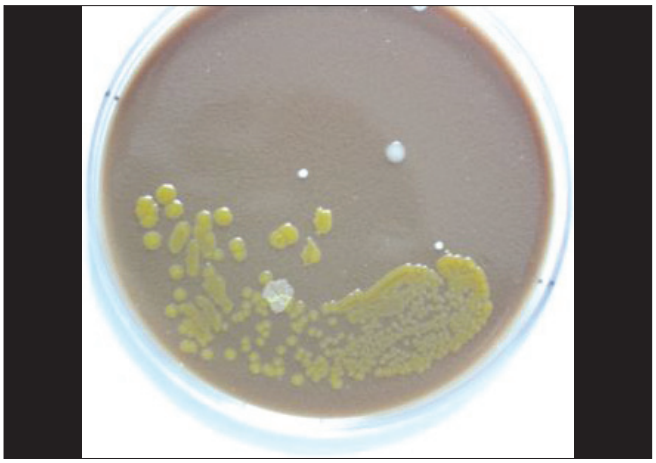

Figure 4: Confluent growth of multiple colonies on chocolate agar

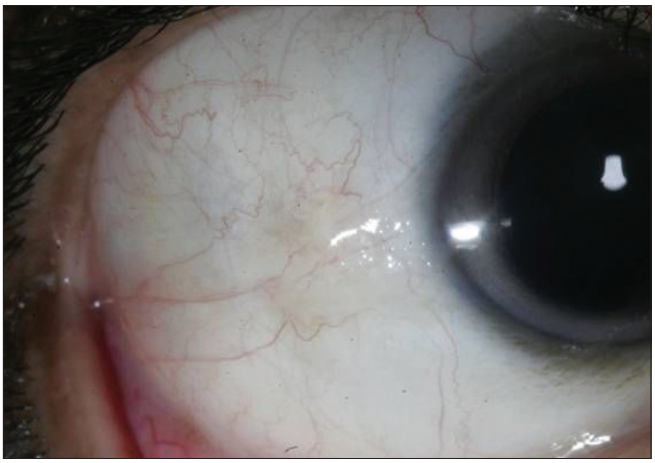

Figure 5: Complete resolution of the conjunctival ulcer in the right eye

All other routine lab tests including a complete hemogram were normal. Topical tobramycin was discontinued in view of aminoglycoside resistance, and ciprofloxacin eye ointment along with oral co-trimoxazole twice a day was added for a period of two weeks. Complete resolution of the conjunctival ulcer [Fig. 5] was noted at three weeks following initiation of therapy.

Discussion

S. maltophilia is an opportunistic ocular pathogen which is known to cause conjunctivitis,[3] keratitis,[3] and endophthalmitis.[3,4] We present a case of microbiologically proven *S. maltophilia* conjunctival ulcer. The organism isolated from our patient was resistant to aminoglycosides. It was, however, sensitive to most quinolones and co-trimoxazole, and the patient responded well to treatment with both.

Penland *et al*.[3] reported that most infections caused by this organism occur in patients with ocular compromise, and the characteristically resistant antibiogram of *S. maltophilia* limits the therapeutic options. Our case did not have any ocular compromise, but the antibiogram susceptibility showed similar results.

Timely identification of the organism is important in the management of ocular infections caused by *S. maltophilia*. Culture and sensitivity additionally helps in determining the drugs to be used. Das *et al*.[4] have reported a successfully treated case of endogenous endophthalmitis due to *S. maltophilia* infection with antibiotic sensitivity-guided antibacterial therapy. *Stenotrophomonas* infections, especially conjunctivitis/conjunctival ulcer, have a good prognosis if treated appropriately.

To conclude, we report, to the best of our knowledge, the first case of conjunctival ulcer caused by *S. maltophilia* that resolved completely without any morbidity owing to early recognition and appropriate treatment. It would thus be prudent to keep in mind *S. maltophilia* as a possible pathogen in the etiology of conjunctival ulcer.

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