

Pseudomembranous conjunctivitis caused by *Staphylococcus aureus*

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ABSTRACT

A 20-year-old female patient presented with complaints of redness, irritation, foreign body sensation, pain and excessive watering in the right eye since one month. On examination, conjunctiva was congested with pseudo membrane over the inferior fornix. *Staphylococcus aureus* was isolated from the conjunctival swab. Case was diagnosed as pseudomembranous conjunctivitis (PMC) caused by *Staphylococcus aureus*.

Key words: Pseudomembranous conjunctivitis, *Staphylococcus aureus*, Gentamicin

INTRODUCTION

Pseudomembranous conjunctivitis (PMC) is a rare ophthalmic lesion usually caused by infectious agents such as Streptococcus, Klebsiella, Chlamydia or Adenovirus.^[1]

CASE REPORT

A 20-year-old female college student presented to Ophthalmology out-patient department (OPD) with complaints of redness, irritation, foreign body sensation, pain and excessive watering in the right eye since 1 month. She was treated outside with moxifloxacin eye drops for 1 week. As there was no improvement, patient visited our hospital, Adichunchanagiri Institute of Medical Sciences (AIMS), BG Nagara. No past history of injury or upper respiratory tract infection was associated with the patient.

Ocular examination

Right eye showed velvety red, congested conjunctiva with excessive lacrimation. Thick membrane was seen over the inferior fornix, on peeling the membrane there was no bleeding. Visual acuity was normal. Conjunctival swab was sent to microbiology department and the peeled membrane was sent for histopathology, AIMS, BG Nagara.

Microbiological investigation

Gram stain showed a few pus cells and gram positive cocci. Culture resulted in growth of gram positive cocci, identified as *Staphylococcus aureus* by standard method.^[2] *S.aureus* isolated was sensitive to Pencillin, Ciprofloxacin, Netlimicin, Azithromycin, Cotrimoxazole, Cefuroxime and Cefoxitin. Conjunctival swab from the left eye was negative for bacteria.

Histopathology

Macroscopy showed linear tissue bit measuring 1.5 cm length with greyish white external surface. Microscopy showed collagenous tissue, mixed inflammatory infiltrate comprising of neutrophils, eosinophils, lymphocytes and plasma cells. Impression was given as conjunctivitis.

Based on above findings, the case was diagnosed as PMC caused by *Staphylococcus aureus*.

Treatment

Patient was put on Gentamicin sulphate 1% eye drops 4 hourly. Improvement was observed in a week time. Artificial tear drops — methylcellulose ointment 1% at night time was given along with pain killers, anti-inflammatory and Vitamin B complex. Patient was completely normal in 3 weeks time.

DISCUSSION

Streptococcus pyogenes and *Corynebacterium diphtheriae* are the most common causes of membranous conjunctivitis.

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In diphtheritic conjunctivitis, there is formation of true membrane, when peeled blood oozes out from conjunctival surface. *Streptococcus pyogenes* infection of the eye resembles ligneous conjunctivitis.^[3]

Acute bacterial conjunctivitis is an infective condition in which the eyes become red and inflamed. The condition is not normally serious and usually recedes spontaneously within about a week. People with acute conjunctivitis are often given antibiotics, usually as eye drops or ointment, to speed recovery. The signs of conjunctivitis responds well to antibiotics, but the benefits are marginal as in most cases the infection is self-limiting. Bacterial conjunctivitis is commonly due to infection with *Haemophilus influenzae*, *Streptococcus pneumoniae* or *Staphylococcus aureus*.^[4]

Bacterial conjunctivitis is a contagious infection of the surface of the eye usually treated empirically with topical antibiotics. Hass reported that the most prevalent species was *Haemophilus influenzae*, followed by *Staphylococcus epidermidis*, *Staphylococcus aureus*, the *Streptococcus mitis* group and *Streptococcus pneumoniae*. One species identified in his study, which was not previously noted as a common cause of bacterial conjunctivitis, was *Dolosigranulum pigrum*. Ampicillin resistance was common among *H. influenzae* isolates, while macrolide resistance was high among *S. pneumoniae*, *S. epidermidis*, and *S. aureus*. The latter two species also included a number of isolates resistant to Methicillin and Ciprofloxacin.^[5]

Susceptibility of the most common ocular pathogens to ophthalmic antimicrobial agents has dropped dramatically: *S. pneumoniae* and *S. aureus* have developed high rates of resistance. Widespread systemic treatment with Azithromycin or Tetracycline for control of endemic trachoma in two villages in Nepal resulted in increased rates of antibiotic resistance among nasopharyngeal isolates of *S. pneumoniae*. *S. aureus* is developing resistance to Methicillin and to fluoroquinolones, such as Levofloxacin.

But fluoroquinolones are still effective against most bacteria that cause conjunctivitis or keratitis, because they penetrate the cornea well, they should be used if clinical features suggest corneal involvement. Most patients recover without treatment even if the organism has appreciable antibiotic resistance.^[6]

Staphylococcus aureus is the commonest cause of bacterial conjunctivitis,^[3] but a rare cause of membrane over the conjunctiva. This case is reported for its rarity.

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