INTRODUCTION

Canaliculitis is a relatively uncommon chronic unilateral infection of the lacrimal canaliculus.\textsuperscript{1} Its classical features are mild to severe swelling of the canaliculus, mucopurulent discharge from the punctum and a pouted punctum; often associated with redness of surrounding tissue and a chronic, refractory conjunctivitis.\textsuperscript{2} Due to the diagnostic difficulties, it is often misdiagnosed and insufficiently treated.\textsuperscript{3} A variety of agents including bacteria, fungi and viruses may produce such infection but Actinomyces have the commonest association.\textsuperscript{4} The laboratory diagnosis of definite aetiology depends upon isolation of the pathogen on culture. We report a relatively rare case of canaliculitis in which \textit{Nocardia} was found to be the causative agent.

CASE REPORT

A 60-year-old female patient, resident of agricultural suburbs of Gujranwala presented with a history of redness and intermittent mucopurulent discharge from the right eye for the last 1.4 years. She had been receiving various topical and systemic antibiotics over this period from various hospitals, but the ocular condition and associated symptoms were refractory to those treatments.

On examination, her vision was found to be 6/12 in the right eye (secondary to senile cataract) and 6/9 in the left eye, in which she had undergone a satisfactory pseudophakia some 12 months back. Adnexal examination showed a non-tender, swollen and pouted punctum right eye, obviously blocked by a large yellowish concretion (Figure 1). Probing and sac syringing was performed on the right side in the Operation Theatre under strict aseptic conditions. During the procedure, the lower punctum on the right was found to be pouted and was blocked with a large concretion; which was successfully removed. Three more concretions (so-called “Sulfur granules”) were expressed out of the dilated canalicular system through the punctum. To ensure that all concretions were removed, a one snip procedure was also performed. This resulted in expression of a further two more, albeit smaller concretions. Sac syringing was done and a free flow was established. The concretions (“Sulfur granules”) were sent for routine examination, staining and culture to the laboratory, to establish a definitive diagnosis and for formulation of an appropriate treatment. In the meantime, she was empirically put on oral cephalosporins (Cefixime 400 mg once daily) for 03 weeks and topical 0.3% Gatifloxacin eye drops; administered at 4 hourly intervals in the right eye. For postoperative analgesia, she was prescribed mafenamic acid on SOS basis for the first 2 days. The specimen containing granules was processed for microscopy and culture in the lab. The granules were crushed and stained by Gram’s and modified Ziehl Neelsen’s (ZN) stain. Gram’s stain revealed the granules to be collection of Gram positive, beaded and branching filaments. The same were found to be not acid fast on modified ZN stain. The specimen was inoculated onto chocolate, blood and MacConkey’s agar for aerobic incubation and on blood agar for anaerobic incubation. After 03 days of incubation at 37°C, buff coloured colonies, hard in consistency and embedded in the agar were isolated on blood and chocolate agar plates incubated aerobically (Figure 2). Microscopy of the colonies revealed branching Gram positive rods (Figure 3), which were not acid fast on modified ZN stain. On the
basis of growth characters, colonial morphology and the branching positive rods on Gram’s stain the isolate was identified as *Nocardia sp*. It was sensitive to the third generation cephalosporins, the treatment being given to the patient.

The patient was reviewed in OPD on 4th postoperative day, at 2 weeks and then at 1 month. A complete recovery was noticed and she was satisfied, having no more red eye and epiphora. Since she had undergone an unremarkable cataract surgery in the left eye a year ago, she sought an opinion for cataract surgery in the right eye but was recommended a wait of 3 months of follow-up before any intraocular surgery could be considered.

**DISCUSSION**

Canaliculitis mostly presents with an associated redness and swelling of the punctum and surrounding area of the affected canaliculus. A unilateral chronic conjunctivitis, mucopurulent discharge is often present and concretions are visible in the lacrimal punctum in some cases. Due to the rarity of the condition and diagnostic difficulty, it is often overlooked and inadequately treated. Appropriate treatment is often delayed as the patients are initially treated for conjunctivitis.

Since actinomyces is the commoner mimicking condition, empirical treatment includes quinolones such as ciprofloxacin for 10 days, cephalosporins such as topical cefazolin for 1 month and irrigation with penicillin solution. Accurate treatment depends upon the identification of the type of pathogen causing the infection. Actinomyces are the commonest isolate in such cases but other agents like *Staphylococci* and mixed organisms are also found at times. *Nocardia sp* is one of the rare organisms causing this infection.

Normal habitat of the *Nocardia sp* is the soil so the corneal or adnexal infections usually occur once there is trauma and contamination with soil. This patient was also from the rural background and she might have gotten this infection from soil, organic matter or animals. Since she was not accurately diagnosed earlier, she was not treated properly. Once diagnosed clinically; probing, removal of the concretions and sac syringing was done. Bacteriological diagnosis was confirmed by culture, and topical/systemic antibiotics were tailored. Resultantly, the patient responded very well. Since in this patient, the isolated organism was sensitive to the antibiotic started empirically, the outcome of initial treatment was optimum and continued. However, pathogens vary between bacterial and fungal agents, despite the characteristic clinical symptoms, laboratory evaluation by culture and sensitivity should always be done to identify the actual pathogen. *Nocardia sp*, although a rare agent, should also be kept in mind. It can be easily diagnosed on Gram and ZN stained smears of the concretions and can be confirmed on aerobic isolation on simple culture media like blood and chocolate agar in 3-7 days. Most of the *Nocardia sp* are acid fast on modified ZN stain but *Nocardia sp* isolated in our patient was not acid fast, which was also the finding on initial ZN stained smear of the concretions.

To conclude, primary chronic canaliculitis should be considered in any patient who presents with chronic or recurrent conjunctivitis and the eyelid should be inspected for a discharging and pouted punctum. Failure of the condition to resolve on topical treatment requires probing and sac syringing of the canalicul system and physical removal of all the concretions. These should be subjected to bacteriological analysis so that proper antibiotics can be administered.

**REFERENCES**


5. Vecsei VP, Huber-Spitzy V, Arocker-Mettinger E, Steinkogler FJ.
Nocardia canaliculitis
