Chula Med J Vol. 47 No. 3 March 2003

Preseptal cellulitis and lid necrosis caused by Pseudomonas aeruginosa : A case report

Suppapong Tirakunwichcha*
Siripat Ubolsing*
Kawin Sirikawin*
Kobkier Laohapotjanart*

Tirakunwichcha S, Ubolsing S, Sirikawin K, Laohapotjanart K. Preseptal Cellulitis and lid necrosis caused by Pseudomonas aeruginosa : A case report. Chula Med J 2003 Mar; 47(3): 169 - 73

A 43-year-old male with AIDS presented with preseptal cellulitis caused by Pseudomonas aeruginosa. The inflammation was so severe that the patient developed lid necrosis, cantholysis and scleritis. Treatment was given by intravenous ceftazidime and surgical debridement. The wound healed by secondary intention with good visual outcome.

Keywords : *Preseptal cellulitis, Pseudomonas aeruginosa.*

Reprint request : Tirakunwichcha S. Department of Ophthalmology, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand.

Received for publication. January 15, 2003.

*Department of Ophthalmology, Faculty of Medicine, Chulalongkorn University

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

ศุภพงศ์ ถิรคุณวิชชะ, ศิริพัช อุบลสิงห์, กวิน สิริกวิน, กอบเกื้อ เลาหพจนารถ. Preseptal cellulitis และหนังตาตายจากเชื้อ Pseudomonas aeruginosa : รายงานผู้ป่วย 1 ราย. จุฬาลงกรณ์เวชสาร 2546 มี.ค; 47(3): 169 - 73

รายงานกรณีศึกษาผู้ป่วย 1 ราย อายุ 43 ปี ที่มีภาวะภูมิคุ้มกันบกพร่อง มาพบด้วยอาการเปลือกตาขวาอักเสบ บวม แดง ที่เกิดจากเชื้อ Pseudomonas aeruginosa การอักเสบรุนแรงมากมีการตายของเนื้อเยื่อที่เปลือกตา เอ็นที่มุมตาและผนังลูกตาได้ให้การรักษาด้วยยาปฏิชีวนะ ceftazidime ทางหลอดเลือดดำและทำ surgical debridement แผลหายเอง โดย secondary intention และสายตาปกติดี

คำสำคัญ : *เปลือกตาอักเสบ, เชื้อ Pseudomonas aeruginosa*

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

Preseptal cellulitis is an infection of the eyelid that is confined anterior to the orbital septum. It is a common disease that results in erythematous lid swelling with tender. It usually arises from superficial skin infection and trauma. Staphylococcus aereus and Streptococcus are among its common pathogens. In children and infants under the age of five, it is often caused by H. influenzae, and underlying sinusitis is generally its common source.

Case Report

A 43-year-old male presented with a 7-day history of right periorbital swelling and fever. AIDS had been diagnosed three years prior to the examination. He had been on HAART therapy and developed tuberculous lymphadenitis and CMV retinitis of both eyes which resulted in visual acuity of 20/70 OD, 20/20 OS. His CD4 count was 8 cell/ ul and HIV – 1 RNA was 26100. His medications were Zidovidine 400 mg / day, Stavudine 300 mg / day and Efavirenz 600 mg / day. Four days prior to admission, the examination revealed visual acuity of 20/70 on the right eye and 20/20 on the left eye. The right upper and lower eyelids were swollen, erythematous and tender without obvious fluctuation. The conjunctiva was injected and edematous with mild mucous discharge. The cornea was clear as well as the anterior chamber with negative RAPD. Eye movement was full in all directions without pain. The diagnosis of preseptal cellulitis was established. Prescribed treatment was oral dicloxacillin 2 gm / day at outpatient service. However, the symptom did not improved .The patient subsequently developed a high fever (body temperature was 40 C). The right eyelid became closed, marked swollen with purplish discoloration and desquamation. On admission, the radiographic findings of paranasal sinus were clear and CT of the orbit only showed cellulitis confined at preseptal area (Fig.1). Hemoculture was done, and peripheral blood analysis revealed hemoglobins of 6.5 g/dl, white blood cell counts of 760 cells/ml. Intravenous cloxacillin 4 gm / day and gentamicin 240 mg / day were then given which was changed to cloxacillin 12 gm /day and ceftazidime 3 gm/day to cover Pseudomonas infection. His symptoms improved in the two following days except the necrosed skin with overlying eschar on the nasal and temporal sides of the lower eyelids and scleritis (Fig.2). Pseudomonas aeruginosa was later identified in hemocultures which was susceptible to ceftazidime. The ceftazidime eyedrop (50 mg/ml) was added and inevitable surgical debridement was performed and unmasked the underlying cantholysis (Fig.3). The debrided tissue culture and sensitivity test confirmed heavy growth of Pseudomonas aeruginosa. The patient was discharged with oral ciprofloxacin 1 gm / day. His visual acuity remained the same as firstly presented. The wound was healed by secondary intention with limitation of extraocular muscle especially lateral rectus.

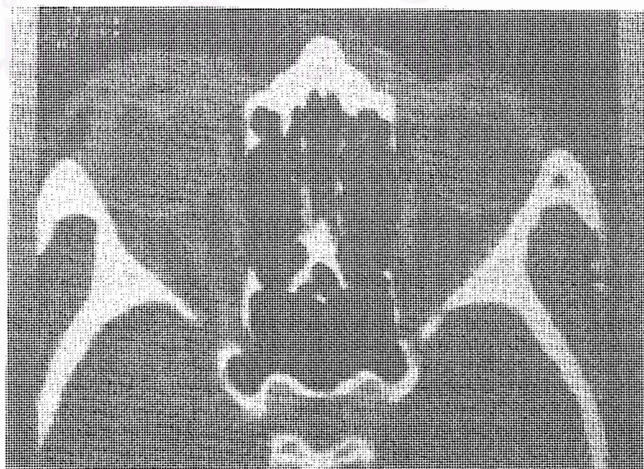

Figure 1. CT Orbit showed cellulitis confined to the preseptal area.

Figure 2. Lid necrosis with overlying eschar.

Figure 3. After surgical debridement.

Discussion

Nowadays, there are many patients with AIDS who are prone to several infections including that of the eyelid. The common causes of eyelid infections in AIDS are Kaposi' sarcoma, Molluscum contagiosum, Herpes Zoster ophthalmicus. There are few reports of orbital cellulitis in AIDS.[1-3] To our knowledge, there is no report of preseptal cellulitis caused by Pseudomonas aeruginosa in AIDS. Although preseptal cellulitis is a common disease that may occur after a trauma or superficial skin infection in normal population. Seldom that it happens in immunocompromised hosts such as neutropenic[4] and malnutrition.[5] In this case, the patient developed Pseudomonas aeruginosa preseptal cellulitis that resulted in severe eyelid necosis, cantholysis and scleritis. No orbital complication was found. Pseudomonas aeruginosa is more opportunistic and invasive. It produces several virulent factors such as cytotoxin, elastase and alkaline protease that can melt away normal tissue. It is however listed among unprecedented organisms which is often overlooked. This case illustrates an unusual situation in clinical ophthalmology which reminds physicians of uncommon organisms in immunocompromised hosts. Early recognition and proper management is needed for intervention.

References

1. Cano -Parra J, Espana E, Esteban M, Diaz-Llopis M, Menezo JL. Pseudomonas conjunctival ulcer and secondary orbital cellulitis in a patient with AIDS. Br J Ophthalmol 1994 Jun; 78(1): 72 - 3
2. Kronish JW, Johnson TE, Gilberg SM, Corrent GF, McLeish WM, Scott KR. Orbital infections in patients with human immunodeficiency virus infection. Ophthalmology 1996 Sep;103(9): 1483 - 92
3. Nash E, Livingston P, Margo CE. Orbital cellulitis in acquired immunodeficiency syndrome. Arch Ophthalmol 1997 May;115(5): 677 - 82
4. Atkins MC, Harrison GA, Lucas GS. Pseudomonas aeruginosa orbital cellulitis in four neutropenic

patients. J Hosp Infect 1990 Nov;16(4): 343 - 9

5. Prendiville KJ, Bath PE. Lateral cantholysis and eyelid necrosis secondary to Pseudomonas aeruginosa. Ann Ophthalmol 1988 May; 20(5): 193 - 5

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย