Cukurova Medical Journal

Olgu Sunumu / Case Report

Postpartum Endogenous Panophthalmitis Caused by Sphingomonas Paucimobilis

Sphingomonas Paucimobilis'e Bağlı Postpartum Endojen Panoftalmi

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Cukurova Medical Journal 2015;40 (Ek Sayı 1):29-32.

ABSTRACT

We present a very rare case of endogenous panophthalmitis in a postpartum patient. A 31-year-old woman was admitted with vision loss and pain in the right eye for two days that began the day after the delivery. Her ophthalmologic examination revealed panophthalmitis and she was hospitalized for treatment and investigation. Despite intensive medication corneal melting and spontaneous perforation occurred, so evisceration had to be performed. Sphingomonas paucimobilis, an opportunistic infection agent, was isolated in the conjunctival swab and evisceration specimen cultures of the patient. It is known that immune system is influenced and inflammatory responses are altered in pregnants and puerperants, so any symptom of eye infection should not be ignored in peripartum and puerperium periods.
Key words: Panophthalmitis; Sphingomonas paucimobilis; postpartum

ÖZET

Bu çalışmada nadir görülen bir postpartum endojen panoftalmi olgusu sunulmuştur. Otuz bir yaşında kadın hasta, doğum yaptıktan bir gün sonra başlayan ve iki gündür devam eden sağ gözde ağrı ve görme kaybı yakınmasıyla başvurdu. Oftalmolojik muayenesinde panoftalmi bulguları izlenen hasta tetkik ve tedavi amacıyla yatırıldı. Yoğun tedaviye rağmen korneada incelme ve spontan perforasyon gelişmesi üzerine hastanın sağ gözüne evisserasyon uygulandı. Hastanın konjonktiva sürüntüsü ve evisserasyon örneği kültüründe fırsatçı bir enfeksiyon ajanı olan Sphingomonas paucimobilis izole edildi. Hamileler ve lohusalarda immun sistemin etkilendiği ve inflamatuar yanıtların değiştiği bilinmektedir, bu nedenle peripartum dönem ve lohusalıkta göz enfeksiyonları ihmal edilmemelidir.
Anahtar kelimeler: Panoftalmi; Sphingomonas paucimobilis; postpartum

INTRODUCTION

Panophthalmitis is an acute suppurative inflammation of all layers of the eye and extension of the inflammation into the orbit. It may result in scleral necrosis and corneal melting, and can also be life threatening in case of optic nerve involvement, so evisceration is performed to these eyes that have no expectation for vision. Endogenous panophthalmitis is known as an infrequent condition and its association with underlying immunocompromised state is well known especially in patients with malignancy and chronic illnesses such as diabetes mellitus. Endogenous intraocular infection during pregnancy is a much more rare situation. There are few instances of endophthalmitis and panophthalmitis developing in the peripartum period[1-6]. We

describe a case of endogenous panophthalmitis caused by *Sphingomonas Paucimobilis* in a postpartum patient. It is remarkable that this is the third reported case of endogenous sphingomonas eye infection occurred after delivery.

CASE

A 31-year-old female patient was admitted to our clinic with vision loss and pain in the right eye. She had a two-day history of ocular complaints that began the day after the delivery without any history of previous ocular disease, surgery, trauma or a systemic disease. She had only a history of an uneventful pregnancy and uncomplicated caesarean section at 38 gestational weeks three days ago.

Visual acuity was no light perception in the right eye. Her eyelids and conjunctiva was extremely chemotic and hyperemic. Eye movements were restricted in every directions. Purulent secretion was remarkable. There was a wide epithelial defect on the cornea that was completely staining. The cornea was so infiltrated and hazy that it was hard to evaluate the details of the anterior segment elements (Figure 1). Intraocular pressure was found high by means of digital tonometry. Examination of the fundus was not possible by ophthalmoscopy so A B-scan ultrasound was performed and it showed marked vitreous inflammation. Orbital tomography revealed thickening of the preseptal tissues in the right orbit. Ophthalmologic examination of the left eye was completely normal.

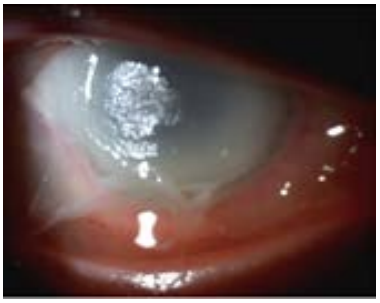

Figure 1. Anterior segment photo of the patient shows chemotic and hyperemic conjunctiva, purulent secretion and hazy cornea.

Patient was diagnosed as panophthalmitis and hospitalized for medical treatment primarily. Investigations included a full blood count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), liver and kidney function tests, serology, chest X-ray and urine analysis. Laboratory data were significant for white blood cell count (15,600/ µL), ESR (38 mm/h), and C-reactive protein (12 mg/L). Corneal and conjunctival swab cultures were taken as well as blood and urine cultures for both bacterial and fungal investigation. After taking samples, topical fortified vancomycin (50 mg/ml) and fortified gentamicin (15 mg/ml) eye drops were applied hourly with cyclopentolate and artificial tear drops three times a day. The patient was given parenteral mannitol and oral acetazolamid to reduce ocular hypertension. Meanwhile the patient was consulted to the Obstetrics and Gynecology Department. No pathologic finding was detected in her gynecologic examination. Vaginal swab culture was taken from the patient. Vancomycin 2x750 mg and ceftazidime 3x2 g was administered intravenously considering the recommendations of the Infectious Disease Department.

As we planned a vitreous tap and intravitreal antibiotic injection, we realised that cornea was melting with a rapid progression within several hours and about to perforate, so we decided to follow the patient with sole medical treatment without any intraocular manipulation. Despite the intensive anti-microbial medication spontaneous perforation occurred on the second day and evisceration had to be performed after informed consent had taken from the patient. Evisceration specimen were sent for microbiologic and pathologic investigations.

The cultures of blood and urine grew negative. Corneal and vaginal swab culture also resulted as negative. But both the cultures of conjunctival swab and evisceration specimen grew *Sphingomonas paucimobilis* sensitive to gentamicin and ceftazidime. Intravenous vancomycin was discontinued. Antibiotherapy was

continued with intravenous ceftazidim, topical fortified gentamicin and ceftazidime (50mg/ml) eye drops. Evisceration specimen was reported as active inflammation, necrosis, fibro-hyalinization and granulation by the Pathology Department. The patient was followed in the hospital until completing a 10-day course of intravenous antibiotic treatment. She was discharged with topical moxifloxacin and oral amoxicillin-clavulanic acid that the microorganism was found to be sensitive in the antibiogram.

DISCUSSION

Endogenous eye infection during pregnancy and peripartum period is an extremely rare clinical presentation in ophthalmology. Previously similar cases have been reported due to fungal infections[1-3]. In a case series of endogenous endophthalmitis during pregnancy, *klebsiella pneumonia* and *bacillus mycoides* were found to be the pathogen organisms in two patients.[4] This study is the third reported case of peripartum endogenous ocular infection caused by *Sphingomonas paucimobilis* in the two-year literature[5,6]. This bacteria is known to be responsible for nosocomial and opportunistic infections and it is widely distributed in the natural environment[7]. It has been reported to cause endophthalmitis after cataract extraction in two cases[8,9]. *Sphingomonas paucimobilis* is a gram-negative, aerobic, nonfermentative bacillus that has a cell wall lacking lipopolysaccharide A, therefore its potential to induce the immune mediators is thought to be quite low. So with proper medication relatively better outcome is expected in *Sphingomonas* endophthalmitis as Rahman et al[5] reported in their case of a pregnant female who developed endogenous *Sphingomonas* endophthalmitis at the time of delivery. Unfortunately our patient's clinical findings had progressed from endophthalmitis to panophthalmitis at the time she was admitted to our hospital and she had even lost her visual acuity. Intensive medical treatment couldn't preclude progression, so corneal melting and spontaneous perforation was inevitable as Kriet et al[6] reported in their case of an endogenous *Sphingomonas* panophthalmitis secondary to a puerperal endomyometritis.

The mechanism of peripartum endogenous infection is not clear. It is postulated that access of bacterium into the maternal venous blood circulation via the plasental site because of premature rupture of membranes or bacteremia secondary to a puerperal endomyometritis may have resulted in endophthalmitis[5]. Intravenous injections and infusions are also thought to be predisposing factors[4]. But our patient had had an uneventful pregnancy and an uncomplicated delivery. Blood culture is the most reliable way of establishing the diagnosis of endogenous endophthalmitis but may not grow positive in every case. In our case the blood culture grew negative but positive cultures were obtained from the conjunctival swab and the evisceration specimen. The primary site of infection could not be identified despite systemic investigations. It was reported that during pregnancy, the activity of natural killer cells, inflammatory macrophages and helper T cells reduces, hence immune responses and disease pathogenesis may alter [10]. It is important to be cautious about any symptom of eye infection, ocular pain and visual deterioration during pregnancy and puerperium because immune system is influenced unfavorably making them susceptible to infectious disease. As in our case, lost of one eye due to panoftalmitis, may cause severe psychiatric trauma in a mother who just gave birth to a newborn. And also the breastfeeding of child may be negatively affected by this situation, which is significant for its normal development.

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Geliş tarihi/Received on : 18.02.2015
Kabul tarihi/Accepted on: 04.03.2015