

Exogenous Endophthalmitis Due to Illicit Drug Injection in an I.V. Drug User

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Abstract

Background: Drug abuse could cause complications; infection and overdose are the most prevalent of them. Unreliable history of addicted patients also makes the diagnosis difficult and leads to delayed treatment and poor prognosis. Early recognition and prompt treatment are required to minimize the destructive damage. To our knowledge, there is not any previous report of bilateral eye injection among drug abusers, causing traumatic endophthalmitis in the English literature and our report helps ophthalmologists to think about rare sources of endophthalmitis. **Aim:** The aim is to emphasize the importance of considering exogenous endophthalmitis in I.V. drug users who abuse drugs. **Methods:** A 40-year-old I.V. drug user man was referred complaining a history of the pain, redness and impaired vision of both eyes from three days ago. Perilimbal injection and anterior chamber cellular reaction were present in both eyes. Both corneas were hazy; corneal edema, abscess, sealed corneal lacerations and dull red reflex were visible in both eyes. **Results:** After an ultrasonography based on the suspicion of endophthalmitis, anterior chamber and vitreous aspiration and intravitreal injection of vancomycin 1 mg and ceftazidime 2.25 mg were performed. The right eye rapidly deteriorated and was eviscerated two days later and the left eye had a good response to medications. **Conclusion:** This report illustrates that the orbit can be a potential site of drug injection and endophthalmitis should be considered in individuals who abuse drugs.

Keywords

Endophthalmitis, IV Drug User, Addiction, Trauma

1. Introduction

Endophthalmitis is an ocular emergency potentially leading to poor prognosis. It is known as an intraocular in-

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fection and is classified to exogenous type due to ocular surgery or trauma, and endogenous type. Intravenous drug abuse is a known risk factor of endogenous endophthalmitis. Common organisms isolated in these patients are gram-positive cocci (streptococcus and staphylococcus), bacillus species and fungi. Early recognition of signs and symptoms and prompt treatment with systemic and intravitreal antibiotics and vitrectomy is required to minimize the destructive damage [1].

Drug abuse could cause many complications; infection and overdose are the most prevalent of them. Searching for new sites for injection could lead to uncommon complications of drug abuse. Unreliable history taken from addicted patients also makes the diagnosis difficult and leads to delayed treatment and poor prognosis.

2. Case Presentation

A 40-year-old I.V. male drug (heroin) abuser was referred to the emergency ward, complaining of a history of pain, redness and impaired vision of both eyes from three days ago. The patient denied any other drug use or trauma and his past medical history was negative according to his statements. The visual acuities in the right and left eyes were no light perception and counting fingers, respectively. Perilimbal injection and lid swelling were present in both eyes especially in the right eye. Both corneas were hazy; corneal edema and abscess as well as dull red reflex were visible in both eyes. Slit lamp examination demonstrated sealed corneal lacerations and scars in both eyes as signs of penetrating injury at the inferior site of both corneas. Cellular and fibrinous reaction was prominent in anterior chamber of both eyes. The left eye had a focal sealed anterior lens capsular rupture and localized traumatic cataract. There were vitreous opacities in both eyes and fundus examination was impossible (Figure 1). However the patient declared bilateral eye injections the day after admission.

After performing ultrasonography based on the suspicion of endophthalmitis, anterior chamber and vitreous aspiration was performed and intravitreal injection of vancomycin 1 mg and ceftazidime 2.25 mg was performed. Also the patient was admitted and intravenous antibiotics (vancomycin 1 gr twice a day and ceftazidime 1 gr three times a day) were administered. The smear of vitreous and AC aspiration were reported as gram-positive cocci and the culture showed the staphylococcus aureus growth, which was susceptible to the administered antibiotics. Other lab data were unremarkable. The right eye condition rapidly deteriorated and it was eviscerated two days later (following performing pars plana vitrectomy showing numerous abscesses in vitreous the day before) and the left eye had a good response to medications and the patient was discharged because he did not give consent for cataract surgery.

Injection of illicit drugs can cause many local and systemic infections. Cutaneous infections and endocarditis are the most common complications [2]. Intravenous drug addiction often results in searching for new sites of

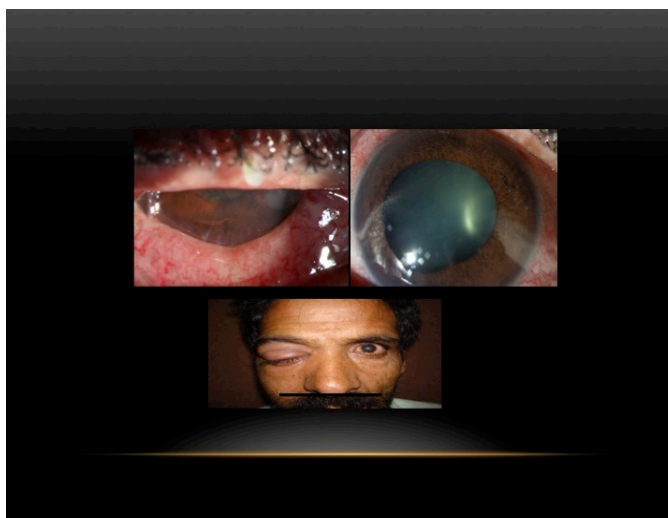


Figure 1. Right eye slit photograph shows multiple injection scars inferior of the cornea (left upper picture), left eye slit photograph shows sealed scarred corneal lacerations (Left upper picture); patient's face (lower picture).

injection. When most of the peripheral veins have been used up, the addict patient approaches the skin (subcutaneous injection) and other unusual sites that can cause unusual complications such as abscesses and tissue necrosis [3]. There are many reported cases of unusual injection sites. For example, White *et al.* have reported a case of penile ulceration caused by drug injection [4], Alvi *et al.* and Holt *et al.* have reported cases of breast ulceration following drug abuse [5] [6] and Hawkins *et al.* have reported a case of Horner's syndrome due to sympathetic damage after injection into neck area [7].

In addition to the systemic consequences, common ocular manifestations of drug abuse include corneal ulcers, endogenous endophthalmitis and talc retinopathy [2]. However, several uncommon cases have been reported showing drug abuse directly affecting the eye. For example, a case of cocaine instillation into conjunctival fornix has been reported to lead to bilateral corneal ulcer [8]. Ghosheh *et al.* have reported a case of orbital cellulitis and superior ophthalmic vein thrombosis due to injecting heroin directly into the orbit [2]. Blackmon *et al.* have reported a case of periorbital injection of drugs that caused bacillus endophthalmitis and lens subluxation [9].

Endophthalmitis is the inflammation of the interior ocular tissue and is typically classified as postoperative, posttraumatic, or endogenous [10]. Although hematogenous spreading of pathogens resulted from drug injection is a known uncommon cause of endophthalmitis [10], direct exogenous traumatic endophthalmitis is rarely considered among drug abusers. Exogenous endophthalmitis is resulted from penetration into the eye such as in postoperative endophthalmitis. Exogenous endophthalmitis was resulted from direct traumatic injection into the eye in our case. Endophthalmitis can have a rapid progression and prognosis is related to prompt diagnosis and treatment. Unreliable history among drug abusers and their tendency not to reveal drug abuse can lead to delayed diagnosis and poor outcomes, so a high degree of suspicion is required for correct diagnosis.

This report illustrates that the orbit can be a potential site of drug injection and endophthalmitis should be considered in individuals who abuse drugs. To our knowledge there is not any previous report of bilateral eye injection among drug abusers, causing traumatic endophthalmitis, in the English literature and our report helps ophthalmologists to think about rare sources of endophthalmitis.

Conflicts of Interest

None.

References

- [1] Mathews, A.S., Pillai, G.S., Natasha, R. and Shetty, M. (2011) Endogenous Endophthalmitis—A Review. *Kerala Journal of Ophthalmology*, **23**, 25-31.
- [2] Ghosheh, F.R. and Kathuria, S.S. (2006) Intraorbital Heroin Injection Resulting in Orbital Cellulitis and Superior Ophthalmic Vein Thrombosis. *Ophthalmic Plastic & Reconstructive Surgery*, **22**, 473-475. <http://dx.doi.org/10.1097/01.iop.0000248991.71690.eb>
- [3] Del Giudice, P. (2004) Cutaneous Complications of Intravenous Drug Abuse. *British Journal of Dermatology*, **150**, 1-10. <http://dx.doi.org/10.1111/j.1365-2133.2004.05607.x>
- [4] White, W.B. and Barrett, S. (1982) Penile Ulcer in Heroin Abuse: A Case Report. *Cutis*, **29**, 62-63, 69.
- [5] Alvi, A. and Ravichandran, D. (2006) An Unusual Case of Breast Ulceration. *Breast*, **15**, 115-116. <http://dx.doi.org/10.1016/j.breast.2004.11.004>
- [6] Holt, R.W. and Miller, D.L. (1988) Cocaine Abuse and Unusual Injection Sites. *Annals of Emergency Medicine*, **17**, 186-187. [http://dx.doi.org/10.1016/S0196-0644\(88\)80332-9](http://dx.doi.org/10.1016/S0196-0644(88)80332-9)
- [7] Hawkins, K.A., Bruckstein, A.H. and Guthrie, T.C. (1977) Percutaneous Heroin Injection Causing Horner Syndrome. *JAMA*, **237**, 1963-1964. <http://dx.doi.org/10.1001/jama.1977.03270450053022>
- [8] Ravin, J.G. and Ravin, L.C. (1979) Blindness Due to Illicit Use of Topical Cocaine. *Annals of Ophthalmology*, **11**, 863-864.
- [9] Blackmon, D.M., Calvert, H.M., Henry, P.M. and Westfall, C.T. (2000) Bacillus Cereus Endophthalmitis Secondary to Self-Inflicted Periocular Injection. *Arch Ophthalmol*, **118**, 1585-1586. <http://dx.doi.org/10.1001/archophth.118.11.1585>
- [10] Kim, R.W., Juzych, M.S. and Elliott, D. (2002) Ocular Manifestations of Injection Drug Use. *Infectious Disease Clinics of North America*, **16**, 607-622. [http://dx.doi.org/10.1016/S0891-5520\(02\)00013-2](http://dx.doi.org/10.1016/S0891-5520(02)00013-2)