Acanthamoeba Keratitis – A case report

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Abstract:
Acanthamoeba Keratitis (AK) is a serious sight threatening infection of the cornea. We report here a case of Acanthamoeba keratitis in a young healthy male. He presented to us with a history of minor trauma in his left eye & immediately he washed his eye with stagnant dirty water. Diagnosis was based on observation of actively motile trophozoites and cyst in normal saline wet mount preparation of the corneal ulcer scraping. Patient was treated with available antiamoebic drugs (Topical Neosporin, Clotrimazol, Tab. Ketaconazol, Polymixin-B). Patient responded extremely well to medical line of treatment.

Key Words: Acanthamoeba keratitis, trophozoites, cyst, wet mount examination.

Introduction:
Acanthamoeba species are free living protozoan parasites that can be isolated from soil, fresh water and stagnant water ponds etc. At least 22 species of Acanthamoeba have been distinguished by cyst morphology, immunofluorescence antibody test, or isoenzyme studies. Ocular infection by Acanthamoeba is rare. It was first reported in 1973 in both USA and UK (Bharathi et al, 2007). In our country first case of AK was reported in 1988 by Sharma et al (1990 b) Corneal infection from Acanthamoeba is believed to result from direct corneal contact with contaminated material or water. A high level of clinical suspicion and wet mount examination of specimens from infected tissue are essential to aid in rapid diagnosis of AK (Sharma et al, 1990 b).

Case report:
A 31 year old male patient presented with complaints of pain, redness and watering in left eye since five days. He was an agricultural farmer. He gave history of minor trauma in left eye with some foreign body, while working in fields. Immediately he washed his eye with stagnant dirty water.
On examination the vision in left eye was 6/36 and in the right eye was 6/6. The left eye showed a large epithelial defect in center of cornea measuring 3mm vertically and 2.5mm horizontally with a prominent ring infiltrate surrounding the epithelial defect. The ulcer extended up to the anterior stroma (Fig. I). The right eye was normal.

A corneal scraping was performed and examined in normal saline wet mount preparation. It demonstrated motile trophozoites and cyst suggestive of Acanthamoeba. These were vediographed (Fig. II). No bacteria or fungi were isolated in culture. The corneal scraping was repeated after 3 days to reconfirm the diagnosis of Acanthamoeba. Patient was treated with available antiamoebic drugs i.e. topical Polymixin B, Neomycin and Bacitracin drops two hourly, Clotrimazol 1% eye drop one hourly, atropine eye drop twice a day and Ketaconazol tablet 200mg orally twice daily. The corneal condition improved within 8 days of instillation of therapy. The frequency of administration of topical drugs was gradually tapered off. The response to medical treatment was excellent.

Following 8 weeks of therapy the stromal infiltration disappeared and ulcer healed. At 6 months followup the cornea was clear without any evidence of subepethelial opacification. The visual acuity was 6/6 in the left eye.

Discussion:
Acanthamoeba keratitis is a growing clinical problem in developed as well as developing countries. Various Indian studies show prevalence rate of 1 to 4% among culture positive corneal ulcers (Sharma et al, 1990b, 2000; Manikandan et al, 2004; Devamani et al, 1998).
In developed countries the single most important risk factor is wearing of contact lens. It is associated with 75% to 93% cases of Acanthamoeba keratitis (Jeanette et al, 1989; Cherry et al, 1998; Illingworth et al, 1995). In developing countries besides contact lens wearing, fall of dust particles, trauma due to vegetable matter, contact with contaminated water etc. have been found to be predominant risk factors of AK (Bharathi et al, 2007; Sharma et al, 1990a,b, 2000; Manikandan et al, 2004; Devamani et al, 1998).

This patient gave a definite history of trauma and immediately washing of his eye with stagnant dirty water.

Various studies have shown increasing prevalence of AK due to increased awareness of the clinical features and easy diagnostic techniques (Manikandan et al, 2004; Jeanette et al, 1989). A characteristic ring infiltrate of the central cornea was the presenting feature in this case. Similar clinical feature is describe in many earlier reported cases (Bharathi et al, 2007; Sharma et al, 1990b; Nicholson et al, 1995).

In most of the reported cases, a primary diagnosis of AK was not made and a delay in correct diagnosis ranged from 7 weeks to 12 months (Sharma et al, 1990b). In our case the diagnosis of AK was suspected on observation of both cyst and motile trophozoites in normal saline wet mount examination of corneal ulcer scraping on first day.

Current medical treatment of Acanthamoeba keratitis include one or more of the following generally used combination (Sharma et al, 1990b; Manikandan et al, 2004; Nicholson et al, 1995).

![Fig. I Clinical photograph of the patient showing ring infiltrate of Acanthamoeba keratitis in center of cornea](image1)

1. Neomycin, Polymixin-B and Bacitracin drop 1-2 hourly.
2. Clotrimazol 1% drops 2 hourly.
3. Propamidie isethionate (Brolene) 0.1% drop 1-2 hourly.
4. Clorhexidine digluconate 0.02% drop 1-2 hourly.
5. Poly hexamethylene biguinide (PHMB) 0.02% drop 1-2 hourly.
6. Ketaconazol 200mg tablet orally twice daily.

Alternate therapy to clotrimazol includes Miconazol 1% drops or Paramomycin drops 2 hourly.

Specific drugs like Brolene and Poly hexamethylene biguinide were not available, so we used combination of Neosporin drops, Clotrimazol drops and Ketaconazol tablet. Surprisingly response to these drugs was good. Corneal infection reduced within one week of therapy and ulcer completely healed within two months. Corneal transplant may be indicated for medical failure and for impending or actual corneal perforation (Sharma et al, 1990b).

**Bibliography:**


