BLINDING COMPLICATIONS OF INTRAVENOUS HEROIN ADDICTION IN YOUNG ADULTS AND THEIR MANAGEMENT

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Candida & Related Yeasts

- Candida albicans is an oval budding yeast that produces pseudomycelium
- Member of the normal flora of mucous membranes of respiratory, gastrointestinal and genital tracts
- Can produce systemic disease in debilitated and immunosuppressed patients & i.v. drug abusers

Candida & Related Yeasts *(cont.)*

When carried through the blood stream can cause miliary abscesses and sepsis in grossly debilitated hosts. e.g. lymphoma & debilitating diseases

PREDISPOSING FACTORS

- Bacterial sepsis
- General debility and immunosuppression
- Hemodialysis
- Indwelling urinary and I.V. catheters
- Recent major surgery esp. on gastro-intestinal tract
- Administration of antibiotics and corticosteroids
- Postpartum women and newborns
- Intravenous drug abuse
- AIDS

Candida Endophthalmitis

- Candida albicans is the most common pathogen causing fungal endophthalmitis and one of the most common of all **endogenous** infections of the eye.
- Long term parenteral hyperalimentation & hemodialysis are the major predisposing factors
- Of patients with candidemia **30%** had clinical or autopsy evidence of ocular candida infection
- **Intravenous heroin abuse and AIDS have increasingly been recognized in the etiology**
- Fungal endophthalmitis complicating drug addiction was first described **1971** by Sugar, Mandell and Shalev

It is now a well characterized disorder that should be familiar to all ophthalmologists and psychiatrists

Candida Infection

Onset :

- Characteristically 3 - 8 hours after the injection of **brown street heroin**, symptoms associated with candidaemia occur
- **Acute symptoms** are : headache, malaise, rigors and night sweats. Thereafter metastatic complications may supervene : tender nodules in scalp and hairy areas. The costo-chondrial junctions is sometimes similarly involved
- **Ocular symptoms** are pain, photophobia and visual loss. retinochoroiditis with overlying inflammatory cell response in the vitreous, producing white fluffy exudative lesions ‘‘puff balls’’ ; when joined by opalescent strands are called “string of pearls”

Candida Infection

Ocular :

- Intraretinal hges, Roth spots, papillitis, scleritis, anterior uveitis, and iris abscess
- Epipapillary abscess…….. SIAM (2001) not reported before
- **In the absence of effective treatment, retinal necrosis, vitreous organisation, tractional retinal detachment and phthisis commonly follow.**
- Spontaneous resolution has been reported
- Re-infection can occur

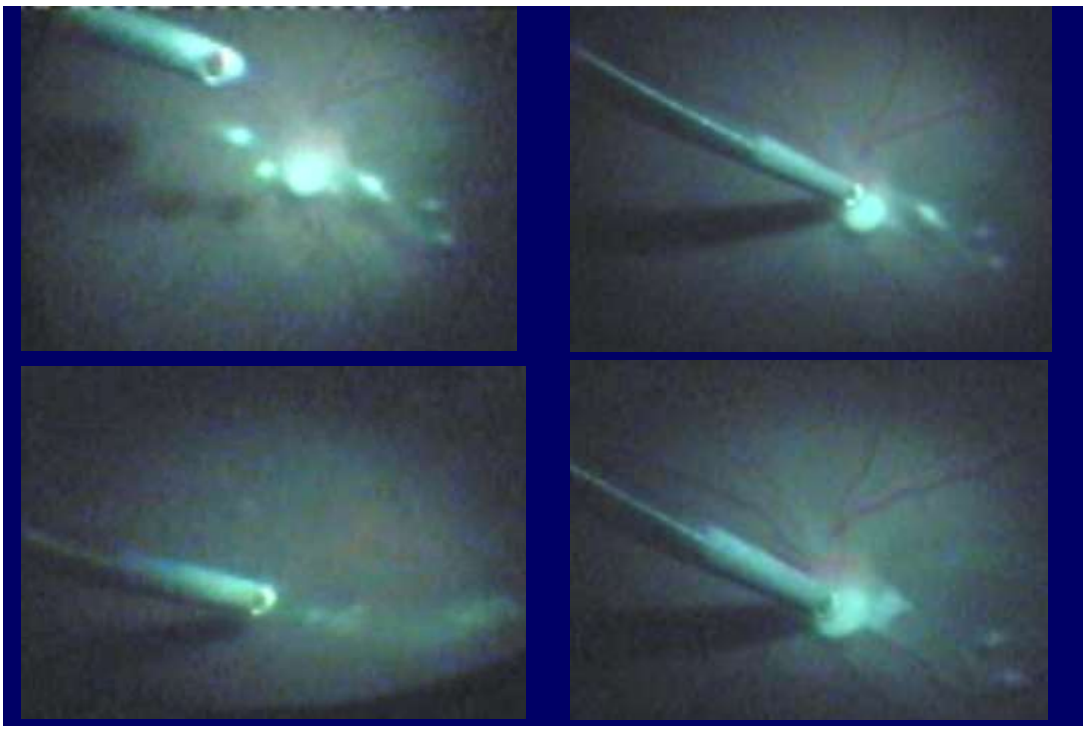
Diagnosis of Ocular Infection by Candida Albicans is Made if :

A patient with signs typical of candida endophthalmitis who also fulfills three or more of the following criteria :

1. **A history of intravenous drug abuse**
2. Systemic S & S consistent with candidemia
3. Significant elevation of **anticandidal serum antibody "IgG"**
4. An elevated serum arabinitol concentration
5. **Culture of Candida albicans** from the vitreous
6. Culture of Candida albicans from scalp nodules

Case Report

- Young lady 25 years old, O.D. 6/12 unaided .OS counting figures ; patient gave a history of heroin addiction through intravenous administration
- Ocular pain and orbital discomfort
- Severe AC reaction with flare and cells
- Vitreous very cloudy , turbid & filamentous
- Very hazy view of the fundus with **‘‘puff balls’’** and a white mass on the optic disc (**a miliary abscess**….. **SIAM 2001**)
- No scalp nodules
- Tender costo-chondrial junction
- She did not receive any treatment



TREATMENT

- Topical atropine and steroids according to the degree of anterior uveitis
- Oral Ketoconazole…….. 400 mg/day
- Oral Prednisolone …….. 60 mg/day
- Intravenous infusion of Amphotericin B ……. 64 mg/day
- Intravitreal injection of Amphotericin B……... 5μg (safe & effective)
- Continuous infusion via a central catheter of 64 mg daily in 5% dextrose until a total dose of 1Gm

- A combination of Flucytosine and Amphotericin B or of Flucytosine & Ketoconazole , which has been successful

TREATMENT

The optimal treatment of candida endophthalmitis remains controversial

Medical :

- Soluble Amphotericin B by intravenous injection

- Oral Ketoconazole
  200 – 400 mg/day
- **Oral Itraconazole (Sporanox)** (a triazole derivative)
  200 mg twice daily → for 3 weeks to 7 months

Drug Treatment *(cont.)*

Most patients with fungal endophthalmitis have systemic disease and require 1 gm of Amphotericin B by i.v route

The drug is toxic

- Renal dysfunction
- Anemia
- Electrolyte imbalance
- Hypotension

DRUG TREATMENT *(cont.)*

- The combination has been recommended to prevent the emergence of resistant candidal organisms, it may also reduce or prevent the need for surgery.
- **It is advisable to use the least toxic agents before recourse to Amphotericin B**
- **By vitrectomy** it is important to isolate the infecting organism to determine its drug sensitivity
- Intravenous Amphotericin B has poor ocular penetration
- Progression of lesions in spite of medical treatment is an indication for vitrectomy to reduce the risk of sight-threatening complications

Treatment *(cont.)*

Surgical :

Vitrectomy :

- Only in patients with dense vitreous opacities
- 5 – 10 ug of Amphotericin B should be injected intravitreally at the end of the procedure
- Systemic Amphotericin B remains the mainstay of treatment
- Systemic Itraconasole , only, was given –no intra.vitreal injection in our case ,with complete resolution

VITRECTOMY

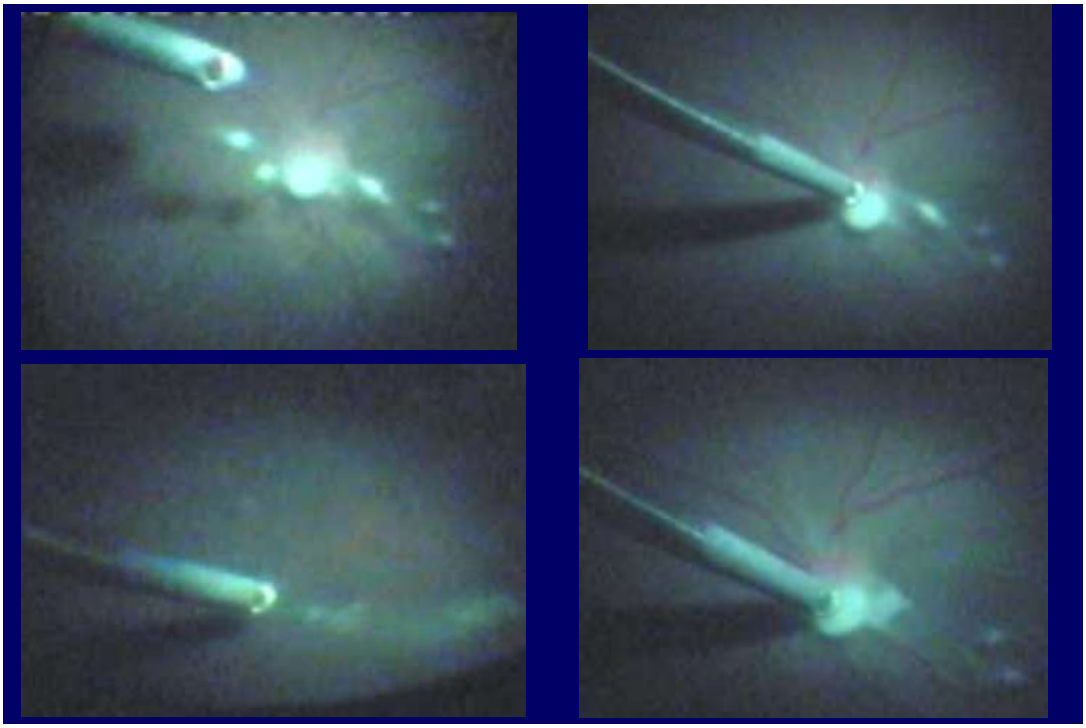
Resolution of the inflammatory process within the vitreous is accompanied by organisation and fibrosis causing varying degrees of macular traction and macular pucker or localised retinal detachment

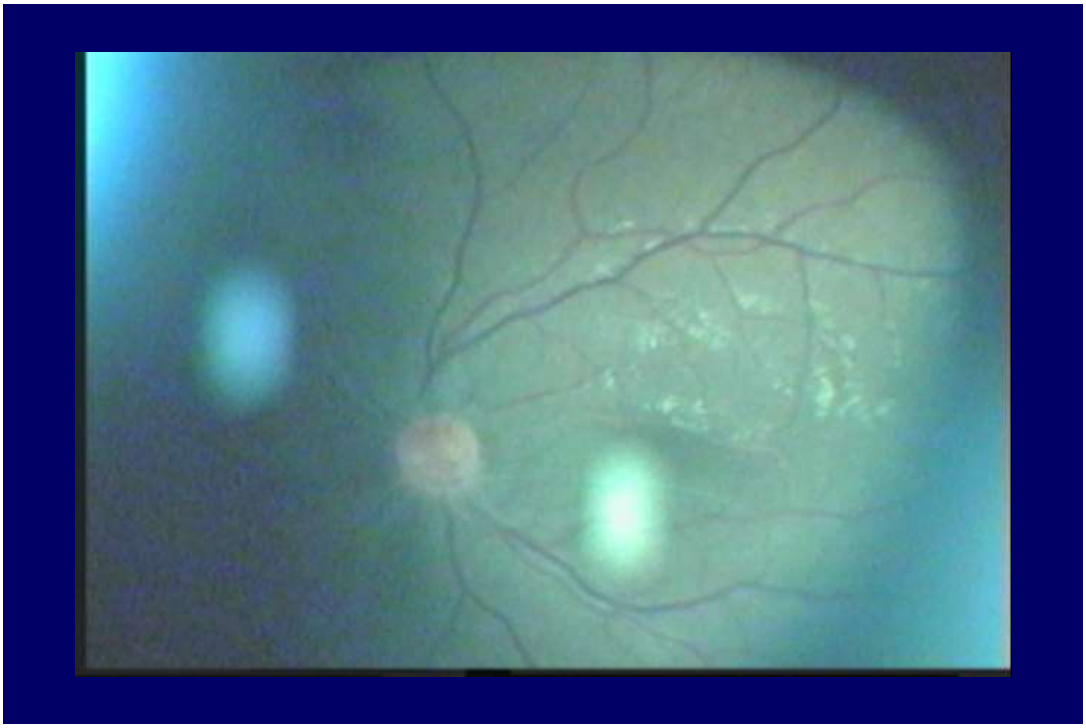
Role of Vitrectomy

- Removes the scaffold for fibrosis
- Assists with diagnosis
- Reduces the infection burden in the vitreous
- Possibly enhances ocular penetration of drugs

- **Risk to the patient‘s eye not significant** with better techniques and more experience

- Care of contamination of theatre equipment and staff with hepatitis- contaminated material





CONCLUSION

Candida endophthalmitis is becoming more frequent in our community under conditions of debility, immunosuppression and iv drug abuse.

The proper line of treatment appears to be PP vitrectomy, laboratory documentation, and the proper choice of antifungal medication, with or without intravitreal antifungal drugs.

We draw attention to the recent prevalence of Candida endophthalmitis in street heroin drug abusers.

First described in 1971