Introduction

Fungal endogenous endophthalmitis (FEE) is a serious ocular condition associated with potentially devastating visual outcomes, which originates from hematogenous dissemination of a fungal organism. 1 Most commonly, FEE is associated with Candida or Aspergillus species. 2 Most patients with FEE have 1 or more predisposing systemic conditions and risk factors, such as diabetes mellitus (DM), prolonged recent hospitalization, iatrogenic immunosuppression, whole organ transplantation, malignancy, indwelling catheters, intravenous drug abuse (IVDA), liver disease, renal failure, recent major surgeries, hyperalimentation, acquired immune deficiency syndrome (AIDS), endocarditis, urinary tract infections (UTI), and dental procedures. 2 FEE may occur rarely in healthy, immunocompetent patients with no risk factors

FEE is frequently a diagnostic dilemma for clinicians with significant vision-threatening consequences for patients. 3 In the present study, we purposed to identify the causative microorganisms of FEE and report the results of PPV with adjuncts intraoperative amphotericin B and systemic antifungal therapy management in patients with FEE who were vitreous culture-proven in our tertiary care referral center.

Methods

A retrospective review was conducted of all cases who were intraocular fluid culture-proven with FEE at our hospital. From December 2013 to March 2017, seven eyes of six FEE patients were treated in our institute with PPV. The diagnosis of FEE was attributed by the following standards: anterior uveitis and/or vitritis and presence of retinitis, existence of an extracellular source of infection, positive microbiologic cultures of any of the specimens such as blood, urine, catheter, etc. Precise inclusion criteria was that ocular cultures have to be positive for fungus and have no coexistent ocular surgery or trauma. All cases had undergone vitreous tap and intravitreal antimicrobial agent injection at the same time before the PPV at the first suitable time. Major ocular specimens were obtained for cultures via PPV. A standard three-port 23.6 PPV was performed. All the surgeries were implemented by the same surgeon (H.C.). During the PPV, to avoid a diluted vitreous sample, the aspiration line was connected to 5-mL disposable syringe. While the surgeon was cutting and aspirating the vitreous, the assistant applied delicate suction with syringe. VA was converted to the logMAR for computing. Wilcoxon Signed Ranks test was applied for the intragroup comparisons of VA Significance was defined as p<0.05.

Results

Patients general characteristics are summarized in Table 1. Diagnosis, type of fungi, predisposing factors and systemic antimicrobial therapy were shown in Table 2. Among fungal related vitreous samples, 5 (71.4%) were yeast and 2 were mold (28.6%). Five of the 8 (62.5%) underwent surgical PPV with or without anterior segment surgery. Two eyes had post-treatment complications (3 [42.8%] had retinal detachment; 1 [14.2%] had recurrent infection). Table 3. 14 of 16 eyes was available for the initial and final follow-up examination. VA improved in 6 eyes (60.7%), and remained in 1 eye (16.7%). The LogMAR VA at the presentation and final follow-up examinations were 1.0 (±0.4) and 1.25 (±0.2), respectively. The average improvement in 16 of 16 eyes (98.6%). LogMAR was not statistically significant (Wilcoxon Signed Rank Test, p=0.015) (Table 4. Figure 1: Due to the small number of cases, this represents, however, seems to be important). It is predicted that the visual outcome will be statistically significant in larger series. At the initial long-term examination, all AF reactions was detected at all cases. OD measurements were within normal limits. All cases had vitreous reaction. In these patients who had a notable vitreous during retinal examination, a string of glistening configurations and abscesses. At the final examination, OD reaction was controlled for all patients. Vitreous culture was sterile. All nothing were flat.

Take home message

There are no randomized controlled trials to evaluate the efficacy of posterior vitrectomy to treat FEE. The only evidence verifying its benefit’s originate from the results of case reports and case series of FEE. Smaller case series have reported more favorable VA results. 4 In our opinion, until multicenter, randomized, controlled studies are performed, case series will maintain their importance and value. In this study, we aimed to share the results of our surgical experience this rare disease with a poor prognosis. Candida species were the most causative fungus type in our patients with FEE. In conclusion, we believed that PPV was the effective diagnostic and therapeutic approach for the FEE cases. We hope that this report will lead to multicenter, prospective studies in the future.

References