ORIGINAL RESEARCH

Evaluation of clinical profile of patients with P. Insidiosum keratitis

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ABSTRACT

Background: With reports coming from the Asia Pacific region, Pythium keratitis has been the subject of increased interest in recent years.The present study was conducted to assess clinical profile of patients with P. Insidiosum keratitis. **Materials & Methods:** 84 cases of P. Insidiosum keratitis of both genders were selected. Predisposing factors, clinical course, microbiological results, treatment, visual outcomes, and demographic information were all documented. **Results:** Out of 84 patients, 50 were males and 34 were females. Visual acuity 6/6-6/60 was seen in 16, 5/60-1/60 in 30 and <1/60 in 38. Clinical presentation was dot like infiltrate in 20, tentacle like infiltrate in 45, peripheral furrowing in 10 and perforated corneal ulcer in 9 cases. The difference was significant (P< 0.05). The risk factors were dirty water in 22, insect injury in 10, dust in 32, and unknown in 20 cases. Previous treatment done was antibacterial in 28, anti- fungal in 8, antifungal-antibacterial in 42 and no treatment in 6 cases. The difference was significant (P< 0.05). **Conclusion:** Dust, insect injuries, contaminated water, and unknown were common risk factors. Clinical manifestations included peripheral furrows, a perforated corneal ulcer, and dot-like and tentacle-like infiltrates.

Key words: Pythium keratitis, peripheral furrowing, tentacle like infiltrate

INTRODUCTION

With reports coming from the Asia Pacific region, Pythium keratitis has been the subject of increased interest in recent years.[1] Pythium is an oomycete that has been known to have a terrible prognosis and to cause a severe infection of the cornea. It is an extremely challenging illness to treat, with patients not responding well to penetrating keratoplasty or traditional antifungal drugs.[2]

The difficulties in managing ocular pythiosis include the disease's aggressive character, very low prevalence, lack of a defined treatment strategy, and clinical and microbiological similarities to fungus.[3] There aren't many published studies on P. insidiosum keratitis in India, most of which are from Southern India. Pythium-induced keratitis is difficult to heal, and those who have it often need numerous keratoplasty procedures. Given the high prevalence of corneal blindness brought on by microbial keratitis, this is a significant matter of concern.[4] It is crucial to identify this debilitating illness and, if at all possible, prevent it. The four clinical manifestations of human pythiosis are systemic, ocular, vascular, and subcutaneous. As with other types, it has been demonstrated that ocular pythiosis has verypoor prognosis.[5]The present study was conducted to assess clinical profile of patients with P. Insidiosum keratitis.

MATERIALS & METHODS

The present study comprised of 84 cases of P. Insidiosum keratitis of both genders. All were informed regarding the study and their written consent was obtained.

Predisposing factors, clinical course, microbiological results, treatment, visual outcomes, and demographic information were all documented. Under topical anesthetic with 0.5% proparacaine, corneal scrapings were obtained. A 5% natamycin suspension was applied to the eyes that had positive fungal smear results. Additionally, itraconazole was applied topically as drops, either by itself or in conjunction with 1% azithromycin. Following surgery, voriconazole 1% was administered to all eyes for three weeks. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 84		
Gender	**Males**	**Females**
Number	50	34

Table I shows that out of 84 patients, 50 were males and 34 were females.

Table II Visual acuity & clinical presentation

Parameters	Variables	Number	P value
Visual acuity	6/6-6/60	16	0.86
	5/60-1/60	30	
	<1/60	38	
Clinical presentation	Dot like infiltrate	20	0.05
	Tentacle like infiltrate	45	
	Peripheral furrowing	10	
	Perforated corneal ulcer	9	

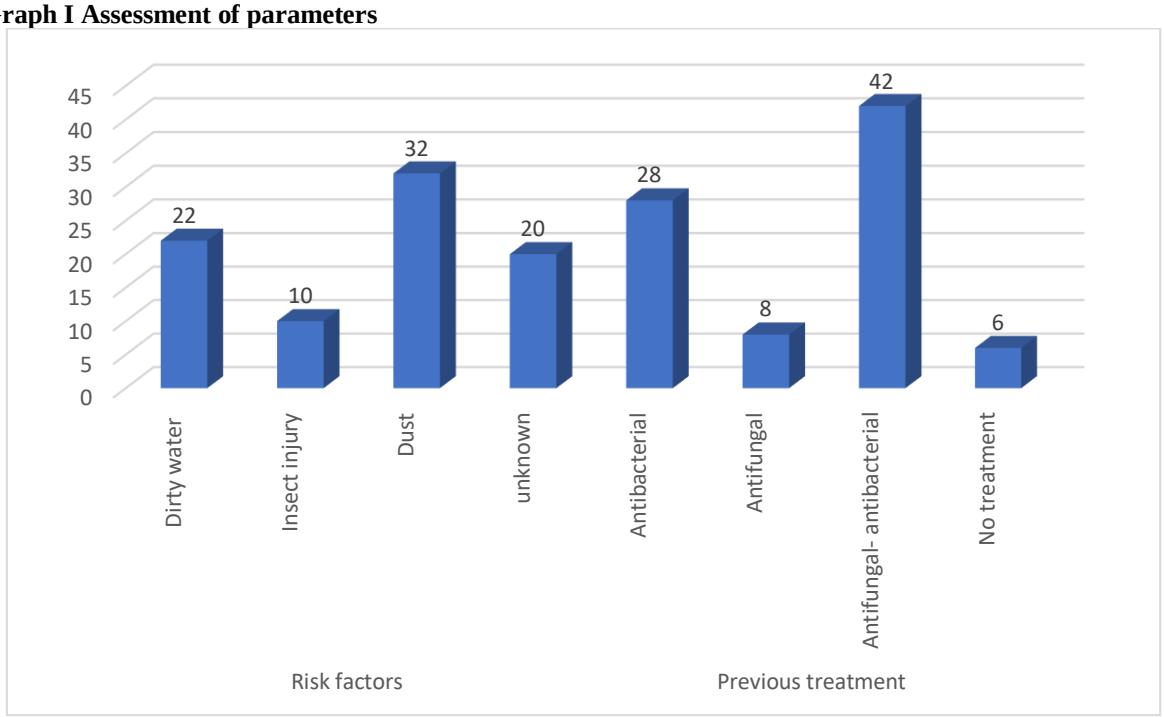
Table II shows that visual acuity6/6-6/60 was seen in 16, 5/60-1/60 in 30 and <1/60 in 38. Clinical presentation was dot like infiltrate in 20, tentacle like infiltrate in 45, peripheral furrowing in 10 and perforated corneal ulcer in 9 cases. The difference was significant (P< 0.05).

Table III Assessment of parameters

Parameters	Variables	Number	P value
Risk factors	Dirty water	22	0.69
	Insect injury	10	
	Dust	32	
	unknown	20	
Previous treatment	Antibacterial	28	0.05
	Antifungal	8	
	Antifungal- antibacterial	42	
	No treatment	6	

Table III, graph I shows that risk factors were dirty water in 22, insect injury in 10, dust in 32, and unknown in 20 cases. Previous treatment done was antibacterial in 28, anti- fungal in 8, antifungal- antibacterial in 42 and no treatment in 6 cases. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

With reports coming from the Asia Pacific region, Pythium keratitis has been the subject of increased interest in recent years. Pythium is an oomycete that has been known to have a terrible prognosis and to cause a severe infection of the cornea.[6] Patients with this condition do not respond well to standard antifungal medications or to surgical techniques like penetrating keratoplasty, making it an extremely challenging disease to treat. Due to its climate, Pythium Insidiosum is known to be endemic there, causing significant reports of both systemic and ocular infections.[7] Pythium Insidiosum keratitis is a rare but highly morbid condition that can cause blindness. It happens when Pythium Insidiosum (P. Insidiosum) infects the cornea. P. Insidiosum is an aquatic fungus that is a member of the kingdom Stramenopila.[8]The present study was conducted to assess clinical profile of patients with P. Insidiosum keratitis.

We found that out of 84 patients, 50 were males and 34 were females.Krajaejunet al[9]retrospectively studied the clinical and epidemiological features of human pythiosis. A total of 102 cases of human pythiosis were documented nationwide. A substantial proportion (40%) of cases occurred in the last 4 years of the 18-year study interval. Clinical presentations fell into 4 groups: cutaneous/subcutaneous cases (5% of cases), vascular cases (59%), ocular cases (33%), and disseminated cases (3%). Almost all patients with cutaneous/subcutaneous, vascular, and disseminated pythiosis (85%) had underlying thalassemia-hemoglobinopathy syndrome. Most ocular cases (84%) were associated with no underlying disease. A majority of the patients were male (71%), were aged 20-60 years (86%), and reported an agricultural occupation (75%). Regarding treatment outcomes, all patients with disseminated infection died; 78% of patients with vascular disease required limb amputation, and 40% of these patients died; and 79% of patients with ocular pythiosis required enucleation/evisceration.

We found that visual acuity6/6-6/60 was seen in 16, 5/60-1/60 in 30 and <1/60 in 38. Clinical presentation was dot like infiltrate in 20, tentacle like infiltrate in 45, peripheral furrowing in 10 and perforated corneal ulcer in 9 cases. Lekhanontet al[10] found A 22-year-old Thai woman presented to clinic with a nonresponsive, progressive corneal ulcer of the left eye. Slit lamp examination showed a large central ulcer measuring 5.4 x 5.2 mm with underlying dense stromal infiltrates surrounded by subepithelial and superficial stromal opacity in a reticular pattern along with radial perineural-like infiltrates. Histopathologic examination revealed broad, branched, thin-walled nonparallel hyaline hyphae with rare septates consistent with P. Insidiosum. The corneal culture confirmed the diagnosis. The infection recurred after multiple therapeutic penetrating keratoplasties. Enucleation was eventually performed to eradicate the infection. No definite report of contact lens-related P. Insidiosum keratitis existed in the literature.

We found that risk factors were dirty water in 22, insect injury in 10, dust in 32, and unknown in 20 cases. Previous treatment done was antibacterial in 28, anti- fungal in 8, antifungal- antibacterial in 42 and no treatment in 6 cases. Tanhehco et al[11]reported with morphologic and phylogenetic speciation the first case from Israel of Pythium Insidiosum keratitis associated with contact-lens wear.A 21-year-old man with a history of contact-lens use and water exposure was hospitalized in Israel for a corneal ulcer. The ulcer progressed despite intensive antibiotics. He flew home to the United States for further care. Examination revealed a corneal ulcer with hypopyon. The infection progressed despite intensive medical therapy, and a therapeutic penetrating keratoplasty was performed. Histology and cornea cultures from the host cornea revealed sparsely septate, branching hyphae, consistent with P. insidiosum. DNA sequencing of the Pythium isolate supported the clinical history that the infection was acquired outside of the United States. Despite intensive medical therapy and a second corneal transplant, the ulcer progressed, ultimately requiring enucleation.

The limitation the study is small sample size.

CONCLUSION

Authors found that dust, insect injuries, contaminated water, and unknown were common risk factors. Clinical manifestations included peripheral furrows, a perforated corneal ulcer, and dot-like and tentacle-like infiltrates.

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