Content available at: https://www.ipinnovative.com/open-access-journals

IP International Journal of Ocular Oncology and Oculoplasty

Journal homepage: https://ijooo.org/

Case Report

Burkholderia pseudomallei – The malicious invader causing orbital cellulitis !!!

I Karthiga[1],*, Venipriya Sigamani[1], Sandhya Bhat[2], Harish Kumar Aravind[1]

[1]*Dept. of Ophthalmology, Pondicherry Institute of Medical Sciences, Kalapet, Puducherry, India*
[2]*Dept. of Microbiology, Pondicherry Institute of Medical Sciences, Kalapet, Puducherry, India*

ARTICLE INFO

Article history:
Received 27-04-2023
Accepted 24-06-2023
Available online 08-08-2023

Keywords:
Orbital cellulitis
Melioidosis
Antibiotics

ABSTRACT

This case report represents an unusual presentation of Melioidosis presenting as orbital cellulitis. Orbital cellulitis is an acute infection of the eye, commonly caused by Staphylococcal, Streptococcal species and also by fungi. Here we report a case of a 57 year old male who was a diabetic and hypertensive presented with fever, protrusion of right eyeball with sudden onset of defective vision. On examination right eye visual acuity was light perception with relative afferent pupillary defect. Proptosis, chemosis and total ophthalmoplegia were present. Routine investigation revealed leucocytosis. Conjunctival swab culture was negative whereas blood culture revealed Burkholderia pseudomallei. On further work up ultrasound abdomen showed splenic abscess. Even with effective treatment with IV antibiotics patient didn't improve and succumbed to this disease. Ocular involvement in melioidosis is rare but can lead to devastating outcomes. This case represents the highly virulent nature of this organism which rarely presents with ocular involvement as primary presentation.

1. Introduction

Orbital cellulitis is an acute infection of the soft tissue of the eye behind the orbital septum. It can lead to serious complications like blindness, meningitis, intracranial abscess, cavernous sinus thrombosis and even death.[1] The causative organism of orbital cellulitis is commonly bacterial including aerobic and anaerobic or even fungal. The most common bacteria causing orbital cellulitis are Staphylococcal and Streptococcal species.[2] Here we report a case of orbital cellulitis caused by Burkholderia pseudomallei causing melioidosis which rarely presents with ocular involvement as primary presentation and the highly virulent nature of this organism.

2. Case Report

A 57 year old male who was a diabetic and hypertensive presented to casualty with worsening swelling around right eye and protrusion of right eyeball with sudden onset defective vision for 5 days which was associated with intermittent fever. No other relevant history.

On examination patient was febrile. Ocular examination showed tense right periorbital oedema, proptosis, complete ptosis, total ophthalmoplegia, chemosis with prolapsed out conjunctiva inferiorly with diffuse congestion of ocular surface. Pupil was 4mm in size not reacting to light with sluggish consensual reflex [Figure 1]. BCVA was perception to light (OD) and 5/60 (OS).

Routine investigation revealed leucocytosis with high CRP. Blood culture showed Burkholderia pseudomallei [Figure 2]. Further work up revealed bilateral pleural effusion, splenic abscess in ultrasound abdomen and temporal abscess in MRI brain with no evidence of

* *Corresponding author*.
E-mail address: ikkarthiga19@gmail.com (I. Karthiga).

https://doi.org/10.18231/j.ijooo.2023.021

cavernous sinus thrombosis. Patient was treated with intravenous meropenam, ceftazidime, vancomycin and oral cotrimoxazole. Even with effective antibiotic treatment for a duration of 20days patient could not be saved.

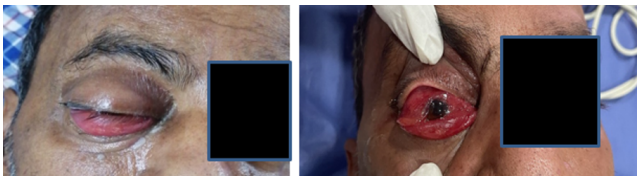

Fig. 1: Right eye showing proptosis with chemosis and prolapsed out conjunctiva

Fig. 2: Mac conkey agar plate showing rough and dry wrinkled colonies suggestive of Burkholderia pseudomallei.

3. Discussion

Melioidosis is a multi-system infectious disease caused by Burkholderia pseudomallei, endemic in South East Asia.[3] The global burden of melioidosis is 84.3 per 1,00,000 people. The infection is transmitted by inhalation of dust, drinking contaminated water or contact with contaminated soil through skin abrasions.[4] Melioidosis is known to present with diverse clinical presentation varying from pneumonia, skin infections, neurological deficit, internal organ abscesses and fulminant septicemia.

Ocular involvement in melioidosis is rare but can lead to devastating outcome with a reported prevalence between 0.49-1.02%.[5] Some of the ocular presentation includes orbital cellulitis, endophthalmitis, pre-septal cellulitis, panophthalmitis and panuveitis. The case fatality rate of melioidosis is 10-50%

Usually orbital cellulitis is caused by gram positive organism and can be cured by intravenous antibiotics, unlike our patient whose blood culture revealed Burkholderia pseudomallei and succumbed to this disease inspite of effective treatment.

Saonanon P reported a case of orbital cellulitis with subperiosteal abscess caused by B. pseudomallei in a 48 year old male. After two weeks of treatmet with IV antibiotics, patient showed marked clinical improvement and continued on oral antibiotics for 6 months.[6]

A 23 year retrospective review of Ocular melioidosis by Sasi Yaisawang et al revealed only 16 cases with ocular involvement in melioidosis indicating the rare ocular involvement.

Chen KJ et al reported a case of endogenous endopthalmitis caused by B.pseudomallei in a 51 year old male who responded to treatment with systemic and intravitreal antibiotics.

Arshad akeel et al reported a case of melioidosis presenting as orbital cellulitis with retro orbital abscess in a 40 year old male who also responded to treatment.

Our patient presented as orbital cellulitis with total ophthalmoplegia and optic nerve compression as primary presentation. On further evaluation blood culture revealed Burkholderia pseudomallei with supporting evidence of splenic abscess on ultrasound which was suggestive of melioidosis. Even with effective treatment with antibiotics patient could not be saved from this disease.

4. Conclusion

Ocular involvement in melioidosis is rare but can lead to devastating outcomes. The morbidity is high and hence it is crucial to have a high index of suspicion and awareness among clinicians and microbiologists is mandatory. This case represents the highly virulent nature of this organism which rarely presents with ocular involvement as primary presentation. Early detection and prompt management may reduce mortality and morbidity.

5. Conflict of Interest

None.

6. Source of Funding

None.

References

1. Chaudhry IA, Al-Rashed W, Arat YO. The hot orbit: orbital cellulitis. *Middle East Afr J Ophthalmol*. 2012;19(1):34–42.
2. Hamed-Azzam S, Alhashash I, Briscoe D, Rose GE, Verity DH. Common Orbital Infections ~ State of the Art ~ Part I. *J Ophthalmic Vis Res*. 2018;13(2):175–82.
3. Yaisawang S, Asawaphureekorn S, Chetchotisakd P, Wongratanacheewin S, Pakdee P. Ocular involvement in melioidosis: A 23-year retrospective review. *J Ophthalmic Inflamm Infect*. 2008;8:5–5.

4. Chen KJ, Sun MH, Hou CH, Chen TL. Burkholderia pseudomallei endopthalmitis. *J Clin Microbiol*. 2007;45(12):4073–4.
5. Chang C. Periorbital cellulitis and eyelid abscess as ocular manifestations of melioidosis: A report of three cases in Sarawak, Malaysian Borneo. *IDCases*. 2020;19:e00683. doi:10.1016/j.idcr.2019.e00683.
6. Saonanon P, Tirakunwichcha S, Chierakul W. Case report of orbital cellulitis and necrotizing fasciitis from melioidosis. *Ophthalmic Plast Reconstr Surg*. 2013;29(3):81–4.

Author biography

I Karthiga, Assistant Professor

Venipriya Sigamani, Associate Professor

Sandhya Bhat, Professor

Harish Kumar Aravind, Junior Resident

Cite this article: Karthiga I, Sigamani V, Bhat S, Aravind HK. Burkholderia pseudomallei – The malicious invader causing orbital cellulitis !!!. *IP Int J Ocul Oncol Oculoplasty* 2023;9(2):102-104.