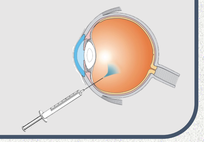
Outcomes following identification of a cluster of **Post-intravitreal Endophthalmitis**: Learning from critical incidents.

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Introduction

Intravitreal Anti-VEGF therapy is commonly used for the treatment of age related macular degeneration, branched retinal vein occlusion and diabetic macular oedema.
Endophthalmitis is a rare but serious complication which can arise following Intravitreal Anti-VEGF injections, with reported incidence between 0.02-0.1%.(1)
These have mainly been associated with gram positive organisms historically, and tend to have poor visual outcomes.(2) Therefore it is imperative to learn from these events and reduce the risk of developing Post-intravitreal Endophthalmitis. We present the outcomes of a suspected Endophthalmitis outbreak cluster in our unit, alongside the measures taken in the investigation, which provide a rare learning opportunity from this critical incident.

Aim

We hope to increase awareness of this complication and learn from this rare incident by promoting an open and honest culture within the Ophthalmic community. We wish to aid the prevention and reduce potential visual loss in future cases.

Method

7 consecutive cases of Post-intravitreal injections were reported over a 14 month period in this trust. These cases were anonymised and the following data was collected;
Diagnosis, Injection date, Anti-VEGF type, Date of presentation, Final V/A, Causative organism,
Further surgical intervention (pars plana vitrectomy) and Secondary complications.
On recognition, our injection service was suspended whilst analysis and changes took place to protocols and procedures.

References

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2. Alex Theventhiran, B, 2021. *Endophthalmitis After Intravitreal Injection*. [online] Reviewofophthalmology.com. Available at: <https://www.reviewofophthalmology.com/article/endophthalmitis-after-intravitreal-injection> [Accessed 12 May 2021].

Results

Patients developing post intravitreal endophthalmitis were treated for neovascular macular degeneration, branched retinal vein occlusion and cystoid macular oedema. Four of seven patients were treated with aflibercept, two with bevacuzimab and one with dexamethasone implant. Gram Positive organisms i.e. staphylococcus were grown in five cases, with no growth in the remaining two. Final visual acuity ranged between 6/12 and CF. Two patients needed vitrectomy retinal detachment repair.

Patient	Diagnosis	Injection	Days from Presentation to Injection	Referred for Surgery	PPV likely?	Repeat Injections Offered	Causative Organism	Pre VA	Post VA	Cataract	Vitritis
A	AMD	Eylea	5	no	yes	Not needed	Staph Aureus	6/24	6/60	1+	1+
B	BRVO	Eylea	13	PPV	done	Not needed	Staphylococcus	6/18	CF	1+	N/A
C	DMO	Eylea	5	no	yes	Declined other eye	Staph Epidermis	3/60	CF	2+	3+
D	AMD	Avastin	16	no	no	Declined	No Growth	2/60	CF	PCIOL	clear
E	BRVO	Eylea	2	no	no	yes	Staph Epidermis	6/18	6/24	1+	1+
F	DMO	Ozurdex	49	no	no	Not needed	Delayed onset	3/60	3/60	PCIOL	clear
G	BRVO	Avastin	4	no	no	yes	Staph Epidermis	6/18	6/12	PCIOL	clear

Table 1. Results table summarising data for each case of Endophthalmitis (A-G)

This event prompted the following changes to our department:

- Eylea vials are not cleaned with an alcohol swab after protective cap removed
- Wearing of scrubs for Intravitreal injection lists
- Assessment of technique of all Intravitreal injectors
- The use of guarded speculums
- Renovation of the room
- Twice weekly deep cleaning

This has resulted in a reduction our endophthalmitis rate - aiding patient safety.

Our unit has not recorded any cases in the past 12 months following 4000+ Intravitreal injections.

Conclusion

> Post-intravitreal injection endophthalmitis carries significant rates of visual loss and necessitates the need for urgent investigation.

> Units with above expected endophthalmitis rates/cluster of cases should have a low threshold for triggering event analysis, and implement changes as above, to maintain patient safety.