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# Endophthalmitis following anti-VEGF injection: analysis of our cases.

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# Introduction

- **Postoperative Endophthalmitis** → inflammatory condition of the eye, presumed to be due to an infectious process from bacteria, fungi or, in rare cases, parasites that enter the eye during the perioperative period.
- The **infectious process** undergoes an initial incubation phase that varies with the generation time of the infecting microbe along with other factors such as production of bacterial toxins
- **Visual loss and debilitation** can be very severe and irreversible.

Prospective Studies(USA)	Endophthalmitis Rate (patient/year)
VISION (pegaptanib)	1/100 (1,0%)
MARINA (ranibizumab)	1/95 (1,1%)
ANCHOR (ranibizumab)	1/138 (0,72%)
CATT (ranibizumab, bevacizumab)	1/198 (0,49%)
VIEW I (aflibercept)	1/152 (0,66%)
Base de dados MEDICARE	1/161 (0,62%)

Prevalence (%)	Microorganisms
33-77%	Coagulase-negative Staphylococci
10-21%	Staphylococcus aureus
9-19%	B-haemolytic streptococci, S. pneumoniae, a-haemolytic streptococci
6-22%	Gram-negative bacteria (Ps.aeruginosa)
Up to 8%	Fungi (Candida sp., Aspergillus sp., Fusarium sp.)

# Results

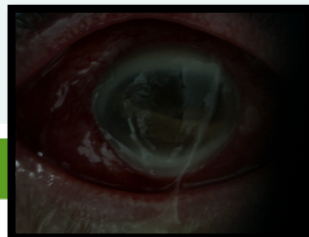


## Case 1

- Male, 67 y-o;
- Macular Diabetic Edema with 2 previous bevacizumab (BVCZ) intravitreal injections (IVI);
- 48h later: decrease visual acuity, red eye and ocular pain.
- 5th day goes to emergency department: Visual Acuity (VA) = count fingers (CF), corneal edema, hipopion, vitritis.
- Admission: 1mg vancomycin + 2mg ceftazidime. 24h later: pars plana vitrectomy (PPV)
- Microbiology Result: *Streptococcus parasanguinis*;
- 2 months later: VA = 0.05.

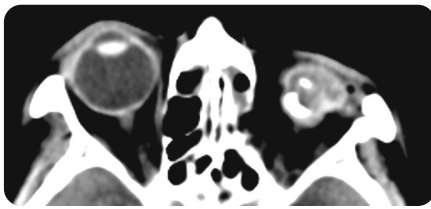
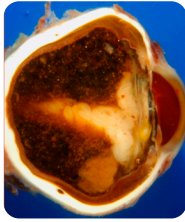
## Case 2

- Male, 61 y-o;
- BVCZ IVI due to macular edema post-central vein retinal occlusion;
- 24h later: decrease visual acuity, red eye and ocular pain.
- 5th day goes to emergency department: VA = Light Perception (LP), corneal edema, hipopion, vitritis.
- Admission: 1mg vancomycin + 2mg ceftazidime. 24h later: pars plana vitrectomy (PPV).
- Microbiology Result: *Streptococcus mitis*;
- 3 months later: VA = LP



## Case 3

- Female, 83 y-o.
- BVCZ IVI due to exsudative AMD.
- 48h later: decrease visual acuity, red eye and ocular pain.
- Same day goes to emergency department: VA = Light Perception (LP), corneal edema, hipopion, vitritis.
- Admission: 1mg vancomycin + 2mg ceftazidime. 144h later: pars plana vitrectomy (PPV).
- Microbiology Result: *Streptococcus salivaris*.
- 2 months later: Hand Motions (HM).

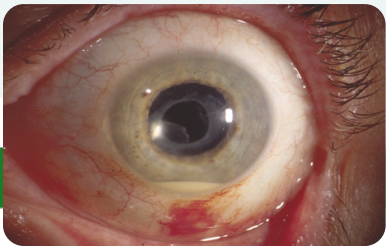


# Results



## Case 4

- Female, 83 y-o;
- BVCZ IVI due to exsudative AMD.
- 48h later: decrease visual acuity, red eye and ocular pain.
- 5th day goes to emergency department: VA = LP, corneal edema, hipopion, vitritis.
- Admission: 1mg vancomycin + 2mg ceftazidime. 96h later: pars plana vitrectomy (PPV).
- Microbiology Result: *Streptococcus gordonii*.
- 2 months later: VA = CF



## Case 5

- Male, 86 y-o.
- BVCZ IVI due to exsudative AMD.
- 15 days later: decrease visual acuity.
- Same day goes to emergency department: VA = HM, vitritis with whitish condensed focus on superior temporal arcade.
- Admission: 1mg vancomycin + 2mg ceftazidime. 72h later: pars plana vitrectomy (PPV).
- Microbiology Results: negative culture; gram + on direct examination.
- 3 months later: VA = 0.1 (decimal scale)

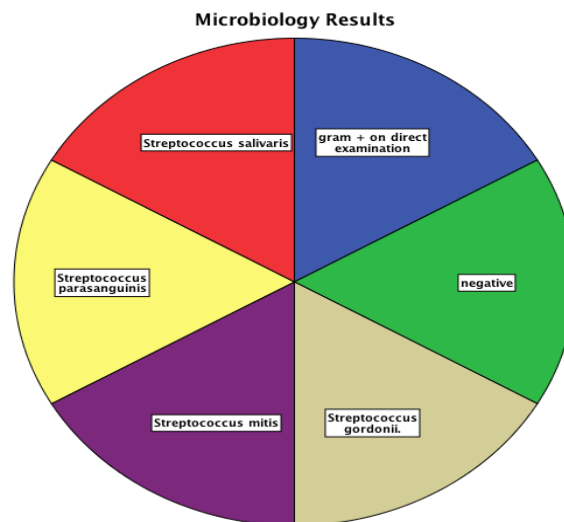
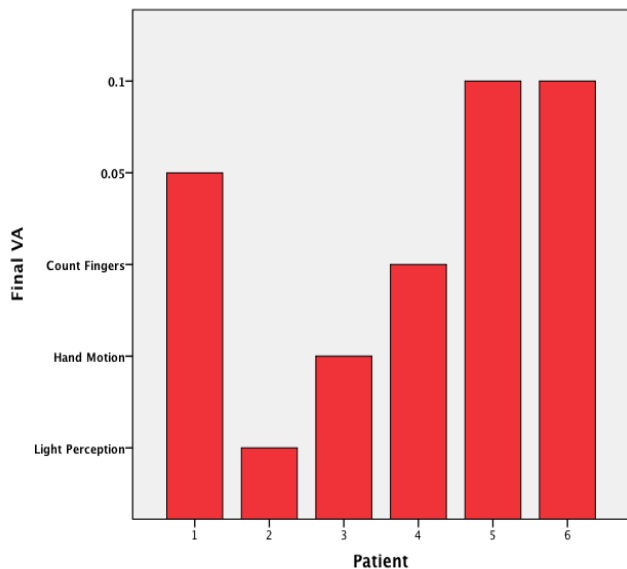
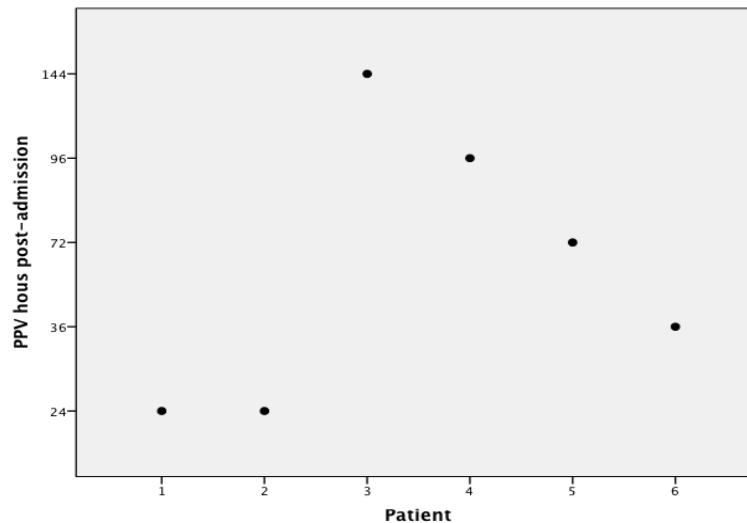
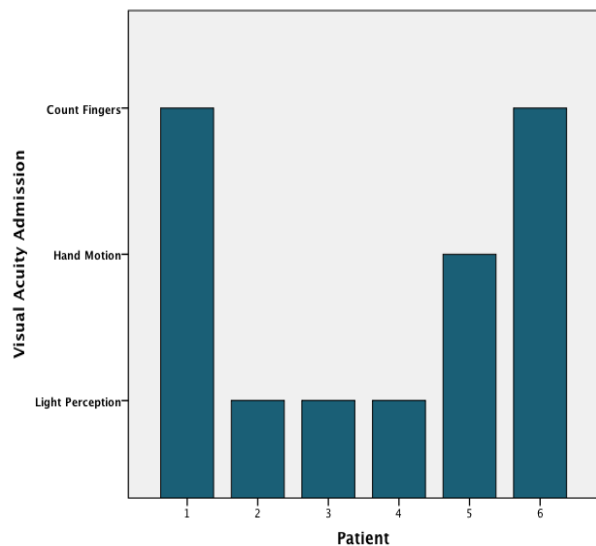
## Case 6

- Female, 75 y-o.
- BVCZ IVI due to macular diabetic edema.
- 48h later: : decrease visual acuity, red eye and ocular pain.
- Same day goes to emergency department: VA = CF, corneal edema, vitritis.
- Admission: 1mg vancomycin + 2mg ceftazidime. 36h later: pars plana vitrectomy (PPV).
- Microbiology Results: negative culture.
- 2 months later: VA = 0.1 (decimal scale).

# Results



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# Conclusions



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Gram-positive Streptococcus is responsible for endophthalmitis in multiple cases.

These bacteria are oropharynx commensal and aerosol contamination is a significant route for infection.



The visual prognosis for aggressive endophthalmitis remains poor despite prompt intervention.

Careful prepping of the patient before intravitreal injection continues to be the most important measure to prevent infection.

