ENDOPHTHALMITIS FOLLOWING STRABISMUS SURGERY

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Aim
To describe a case of infective endophthalmitis occurring after apparently routine 3-muscle exotropia surgery, and discuss implications for strabismus surgery from this case and the published literature.

Introduction

- Endophthalmitis following strabismus surgery is very rare (incidence rates between 1:3500 and 1:18500).
- Presentation typically 3-4 days post-operatively.
- Worsening pain, vision, conjunctival injection and asymmetrical lid swelling.
- Children may present later (communication difficulties).
- Fever is a common feature.
- Causative pathogens commonly commensals (Coagulase-negative Staphylococci species) Strep. species commonly reported. Haemophilus influenzae more common in children.
- Visual outcomes reported range from 20/20 to no light perception with subsequent enucleation despite aggressive systemic and intravitreal antibiotics.

Case Report

- 65 year old Vietnamese male presented to our Ocular Motility Clinic with a longstanding exotropia, dense amblyopic strabismus surgery.
- Past ophthalmic history: bilateral amnioticeneric phthisis.
- Past medical history: well-controlled asthma and hypertension (no immunosuppression).

Examination:

- Unaided visual acuities 6/6 R and 6/6 L.
- Right alternating exotropia 10 Δ.
- Fundoscopy: temporal retina flat, no fibrovascular growth detected.
- EF Kor: normal.
- Management: Admitted for left vitrectomy and anterior chamber tap, with intravitreal and subconjunctival injection of vancomycin and ceftazidime.
- Commenced on topical Prednisolone Forte and homatropine, oral prednisolone 40 mg daily, and intravenous ceftriaxone.
- Moderate subjective and objective improvement over following 48 hours.

- Day 8 post-operative: presented with 3 days of redness and irritation from left eye.
- VFD: 20/50 L.
- Ductions and versions full.
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- Amblyopic strabismus surgery.

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- Excellent result: 6/5 visual acuity unaided, fine epiretinal membrane noted.
- As fundal view improved retinal incarceration was visible at the site of previous abscesses, corresponding to the site of the scleral defect.
- Discharged 12 days after admission (18 days after initial surgery).
- Retina remained flat, no fibrinopurulent ingrowth developed. Within a few months a flat retinal scar developed.

- Two months post-operative:
  - Left visual acuity 6/5.
  - Alternating exotropia 40 Δ, with diplopia.
- Five months post-operative:
  - Alternating exotropia 10 Δ.
  - Ductions and versions full (no evidence of left lateral rectus underaction).
- Two years post-operative:
  - Left best corrected visual acuity 6/5.
  - Alternating exotropia 15 Δ for distance, 30 Δ for near (happy with alignment).
- Left orbitectomy surgery required 11 years later.

- Excellent result: 6/5 visual acuity unaided, fine epiretinal membrane noted.

Conclusion

This case is an important reminder of the serious complications that may result from strabismus surgery. It is reassuring our patient had a benign final outcome, with his residual exotropia perhaps contributed to by the infection and inflammation at his left lateral rectus insertion.

It cannot be determined from this case whether endophthalmitis developed with or without scleral perforation with the 6-0vicryl suture. Dilated fundoscopy was not performed until significant vitritis had developed. The scleral defect noted at the time of exploration could potentially be due to infective scintillae from an extra-ocular source at that point, or an engorgement of a (unrecognised) perforation wound from the original surgery. Prospective studies find scleral perforations are rare (<0.3% per muscle) and almost always recognised intra-operatively.

The findings at exploration in this case do suggest, however, that the 6-0vicryl suture may have been the original focus of contamination and infection. Microbiological studies of suture needles and materials after strabismus surgery have found 15–25% of suture needles or material are contaminated (usually with coagulase-negative Staphylococci species).

This case reinforces the importance of meticulous surgical prepping and draping for strabismus surgery, even though it is often regarded as an ‘extra-ocular’ procedure. It behoves the surgeon to mention the possibility of endophthalmitis, vision loss (and even enucleation) when obtaining informed consent for strabismus surgery.

References