

Sir,
Post-traumatic endophthalmitis following penetrating injury with dental needle

We present a case of post-traumatic endophthalmitis following a visit to the dentist. Penetration of the globe occurred after a dental syringe was dropped onto the patient's right eye. Eye protection for both dentist and patient has become very topical, although not universally adopted as standard practice.

Case report

A 68-year-old female patient presented with tenderness and blurring in the right eye following an accident at the dental surgery, where a dental syringe was accidentally dropped onto her right eye during a procedure. She was presented to the eye casualty department a few hours later. No evidence of penetrating injury was found on examination and visual acuity was 6/18 and 6/9. An area of subconjunctival haemorrhage was present below the inferior limbus, but there was no evidence of epithelial injury on fluorescein staining. Intraocular pressures were 16 and 14 mmHg in the right and left eyes and there was no evidence of a relative afferent pupil defect. The anterior chamber showed no activity and was deep and well formed while the cornea and lens remained clear. Dilated fundoscopy revealed a single vertical streak of preretinal haemorrhage. No evidence of anterior vitreous haemorrhage was found, and the peripheral retina was normal.

After 24 h the visual acuity in the right eye had decreased to CF and the eye had become painful. The anterior chamber showed a severe fibrinous reaction with 4+ cells. Posterior synechiae were present with an IOP of 50 mmHg, but no iris bombe. She was treated for endophthalmitis and a vitreous biopsy was carried out followed by intravitreal injection of 2.25 mg ceftazidime and 1.5 mg vancomycin. Postoperative IOP was 22 mmHg. The dentist was contacted to get a first-hand account of the incident and he confirmed that a dental syringe, with needle had been dropped onto the patient's eye, having slipped from a tray. The incident occurred before the needle had been used and it was therefore presumed to be sterile.

On day 2 the Gram stain showed *Streptococcus* sp. and cultures later identified the organism as *Streptococcus sanguis* (heavy growth). It was resistant only to erythromycin. Light growth of alpha haemolytic *Streptococcus* was also found, with the same sensitivity spectrum. Specifically, both organisms were sensitive to vancomycin. Consensual testing revealed a right relative afferent pupil defect.

By day 3, she had developed a 4 mm hypopion (Figure 1). B scan ultrasound showed moderate vitreous debris but no evidence of a retinal detachment. The patient was taken back to theatre for a second dose of intravitreal vancomycin (0.2 mg) as well as 4 mg triamcinolone.

Phaco and vitrectomy was performed 3 weeks after the original incident. Extensive areas of retinal necrosis were noted and final BCVA was HM in the affected eye.

Comments

Previous reports describe cases of endophthalmitis following penetration by hypodermic and sewing needles.¹⁻³ In a case series of penetrating injuries in children³ eight of the 84 children presented with an occult penetration. Although we found no evidence of penetration of the globe in this case, we feel the most likely mechanism to be exogenous endophthalmitis, acquired through an occult penetrating injury. Dental needles are fine and flexible and a penetrating injury is more likely to seal and remain occult than would be the case with hypodermic needles.

Normal conjunctival flora consists predominantly of coagulase negative *staphylococcus* sp.⁴ and diphtheroids. Although streptococcus sp. has been cultured from the conjunctiva it is not predominant and more common in children than adults.⁵ *S. sanguis* and *Staphylococcus mutans* are the predominant flora in the human oral cavity. They are considered responsible for plaque formation, and in fact make up more than 50% of the plaque mass.⁶ *S. sanguis* has only been reported in the conjunctiva of newborns less than 1-week-old.⁷

However, a retrospective analysis of 773 trabeculectomies found that in the 13 eyes that developed bleb associated endophthalmitis the most frequent

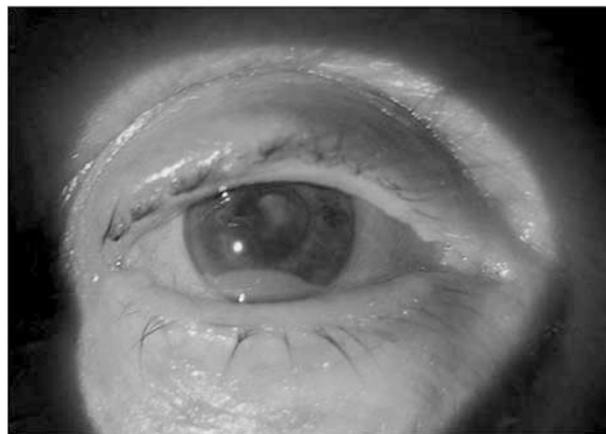


Figure 1 A 4 mm hypopion developed 3 days after the injury.

causative organisms were *Haemophilus influenza* and *S. sanguis*⁸ (6/13). In these cases, no direct association between the oral flora and endophthalmitis can be inferred.

The British Dental Association has advice sheets recommending the use of eye protection for both patient and practitioner during any invasive procedure. This is used primarily to protect against splatter and not specifically against penetrating injury, although the latter would almost certainly be avoided.

An increasing number of dentists are providing their patients with eye protection during routine procedures.

References

- 1 Jalali S, Das T, Majji AB. Hypodermic needles: a new source of penetrating ocular trauma in Indian children. *Retina* 1999; **19**(3): 213–217.
- 2 Poornima R, Newsom R, Mireskandari K, McHugh D. Endophthalmitis following globe perforation with a hypodermic needle. *Br J Ophthalmol* 2000; **84**: 799 (July).
- 3 Peter KR. Penetrating needle injury of the eye causing cataract in children. *Ophthalmology* 2003; **110**: 173–176.
- 4 Singer TR, Isenberg ST, Apt L. *Br J Ophthalmol* 1988; **72**: 448.
- 5 Grasbon T, Mino de Kaspar HW, Klaub V. Coagulase negative staphylococci in the normal and clinically inflamed conjunctiva. *Ophthalmology* 1995; **92**: 793.
- 6 <http://textbookofbacteriology.net/normalflora.html>.
- 7 Reeder JC, Westwell AJ, Hutchinson DN. Indifferent streptococci in normal and purulent eyes of neonates. *J Clin Pathol* 1985; **38**: 942–945.
- 8 Greenfield DS, Suner IJ, Miller MP, Kangas TA, Palmberg PF, Flynn Jr HW. Endophthalmitis after filtration surgery with mitomycin. *Arch Ophthalmol* 1996; **114**: 943–949.

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No proprietary interests

Eye (2006) **20**, 981–982. doi:10.1038/sj.eye.6702096; published online 23 September 2005

Sir, Fatal thrombotic thrombocytopenia purpura presenting with choroidal vasculopathy and serous retinal detachment

We read with interest the case reported by Ong *et al*¹ of Purtscher's retinal microangiopathy from thrombotic thrombocytopenic purpura (TTP). Although this is a rare manifestation of an uncommon disorder, we too have recently seen a case which presented without systemic symptoms where the ocular findings were of a choroidal vasculopathy, which turned out to be fatal despite haematological intervention.

Case report

A 32-year-old Afro-Caribbean female presented with a 24 h history of left blurring of vision associated with a mild headache. Previous ophthalmic history included an undiagnosed episode of unilateral visual disturbance with systemic weakness 13 years previously. She had continued to suffer occasional visual disturbance lasting a few hours, but no weakness. She had sickle cell trait (HbS) and used the combined oral contraceptive pill.

At presentation she was systemically well with only a slight headache. Her visual acuity was 6/4 OD and 6/9 OS and colour vision and visual fields were intact. The adnexae and anterior segments were unremarkable. Fundoscopy revealed pale raised choroidal lesions in both eyes, with overlying subretinal serous fluid (Figure 1). FFA revealed patchy filling defects in the choriocapillaris of both eyes with hotspots of increasing hyperfluorescence representing leakage in areas overlying the choroidal lesions (Figure 2).

Chest X-radiograph was normal but the blood count showed thrombocytopenia, so a haematological opinion was sought. After 6 h she developed nausea and vomiting and the following day fundoscopy of the left eye revealed a haemorrhagic choroidal detachment. Over the next 24 h she developed fluctuating visual disturbances, pyrexia, jaundice, dark urine, diarrhoea, vaginal bleeding, and malaise. Despite emergency transfer to a specialist haematological unit and subsequent plasma exchange she died of a respiratory arrest on the second day of treatment.

Comment

We describe a case of a young woman who died within a week of presenting with mild unilateral blurred vision, the ocular findings preceding systemic onset of TTP. This case is noteworthy for two reasons. First, the