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Sir,
Fine cannula technique for sub-Tenon's injection for ophthalmic anaesthesia

Although various methods of local anaesthesia are in use for ophthalmic surgery, sub-Tenon's anaesthesia is the most popular due to its safety and efficacy. A variety of cannulae have been described for this technique, which vary in guage (G), material, and length. The most popular is a 25 mm, 19 G, curved, blunt, metal cannula first described by Stevens.[1]

Minor complications such as conjunctival chemosis and haemorrhage are common with the standard sub-Tenon's block. Although these rarely present a problem for routine cataract surgery, they may interfere with glaucoma surgery and cosmesis in the weeks following surgery. In our experience, long-term scarring and consequent discomfort may also be associated with the conjunctival incision.

Inserting the anaesthetic cannula directly into sub-Tenon's space without a prior conjunctival incision can reduce conjunctival damage. This also leads to a better, more reproducible block, due to less reflux of anaesthetic from a small insertion site. It also requires fewer instruments. Although incisionless techniques have been reported, we describe a modified incisionless technique using a finer, cheaper, more readily available cannula (26 G, 28 mm lacrimal cannula (Surgistar Inc., Vista, CA, USA) (Figure 1).

Between October 2015 and March 2016, local anaesthesia for consecutive routine cataract surgery was administered by inserting a lacrimal cannula into the inferonasal sub-Tenon's space without a prior conjunctival incision. Pain at each stage of the procedure was graded on a visual analogue scale (0–4). Measures of anaesthetic safety and efficacy were graded from 0 to 3.

Of 32 patients (10 males, 22 females), 57% developed conjunctival chemosis, 53% developed subconjuctival haemorrhage, 16% described pain during anaesthetic administration, 6% described pain during the procedure, and 87% had complete akinesia. The surgeon assessed the block as being 'excellent' in 93% of cases. There were no major complications and the majority of subconjunctival haemorrhage and chemosis involved only 1 quadrant (63 and 65%, respectively).

Our results show that our modified incisionless sub-Tenon's block produces excellent anaesthesia and akinesia with mild conjunctival haemorrhage and chemosis. The absence of a relatively wide conjunctival incision may also reduce post-operative scarring and discomfort.

We feel that, out of all sub-Tenon's blocks described, this technique causes the least trauma to the conjunctiva and the least reflux of anaesthetic, due to the small insertion site. This, in theory, should lead to better anaesthesia/akinesia and fewer complications. It is also cost-effective and uses a cannula that is readily available in all ophthalmology departments.

Our technique compares favourably with published data on the safety and efficacy of the standard sub-Tenon's block (Table 1).[1–4]

Limitations of this technique include pre-operative conjunctival scarring that makes insertion of the cannula without a prior incision difficult.

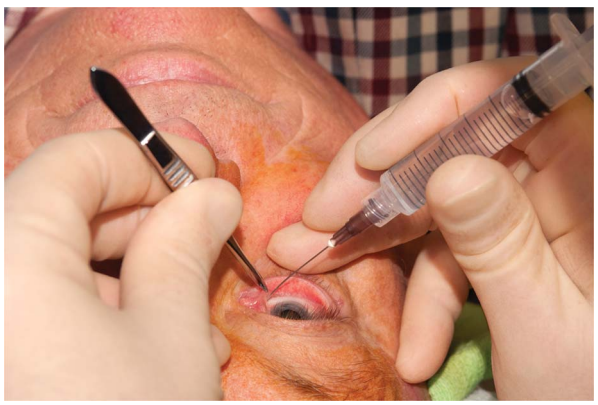

Figure 1 Modified incisionless sub-Tenon's block using the 26 G, 28 mm lacrimal cannula (Surgistar Inc., Vista, CA, USA).

Table 1 A comparison of the safety and efficacy of the sub-Tenon's block in different studies

	Stevens[1]	*Roman et al*[2]	*Guise*[3]	*Kumar et al*[4] *(3 cannulas)*	*El-Khayat et al* (present study, 2017)
Pain during block (%)	18	1	32		16
Pain during surgery (%)	4	3	7	0/0/0	2
Complete akinesia after block (%)	54	0		46/50/46	87
Complete akinesia after surgery (%)		0			59
Chemosis (%)		85	56	76/20/32	57
Subconjunctival haemorrhage (%)	34% (>1 Quadrant)	56	7	56/20/20	53

To our knowledge, there are no studies that look at the long-term scarring or discomfort from the conjuctival incision in standard sub-Tenon's anaesthesia. Future studies looking at this and comparing scarring with incisionless techniques may further make the case for transitioning to incisionless techniques.

Conflict of interest

The authors declare no conflict of interest.

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Sir,
Indications for explant of implantable collamer lens

Implantable collamer lens (ICL) (Visian, STAAR Surgical Co., CA, USA) is a posterior chamber phakic intraocular lens (pIOL) that was FDA approved in 2005 for the correction of moderate-to-high myopia.[1] ICL explant may rarely be needed in the event of complications related to inappropriate vaulting and its consequences. [2–4]

We herein evaluated the indications for ICL explant over the last 3 years in our institution. Ethical clearance was obtained from the institutional review board. Eleven cases underwent ICL explant, and the demographic details of the cases, indications for explant, and visual and anatomical outcomes have been summarised in Table 1. Reasons for ICL explant were chipped haptic of ICL during insertion (1 out of 11), first-stage ICL explant with phacoemulsification before vitreoretinal surgery (2 out of 11), silicon-oil-induced cataract (1 out of 11), inverse ICL with cataract & retinal detachment (1 out of 11), post-traumatic ICL dislocation with anterior subcapsular cataract (1 out of 11), nuclear sclerosis (1out of 11), anterior subcapsular cataract with shallow vault (1 out of 11), high vault with raised intraocular pressure (1 out of 11), shallow vault with recurrent uveitis (1 out of 11), and acute post-operative endophthalmitis (1 out of 11).

Zeng *et al* observed an incidence of 2.6% (16 out of 616) for pIOL exchange, with low vaulting (≤100 μm) leading to cataract in 50% cases, and too high vaulting (≥1000 μm), leading to raised IOP in 50% cases.[2] In contrast, we performed ICL exchange in only two cases because of inadequate vault. Shallow vault resulted in anterior subcapsular cataract in one case, and excessively high vault led to raised IOP in another case.

The reported incidence of post-ICL cataract is 5.2%.[3] In our series, a concomitant phacoemulsification with IOL implantation was performed in 63.6% (7 out of 11) cases. Of these, 57.1% cases (4 out of 7) required phacoemulsification to facilitate subsequent retinal surgery. Corrected distance visual acuity was 20/25 or better in 63.6% (7 out of 11) eyes, and all cases with suboptimal visual outcome had coexisting posterior segment pathology (4 out of 11).

Retinal detachment after ICL implantation is attributed to high myopia, and may be observed in 0.57–1.75% cases.[3] We observed retinal detachment and its sequelae in 36.4% (4 out of 11) cases, which required both ICL explant and phacoemulsification.

Visual rehabilitation is challenging in cases with ICL explant in one eye, with the crystalline lens *in situ*. We performed ICL exchange in two cases (chipped haptic and extremely high vault). A repeat ICL implantation was performed in the case with post-operative endophthalmitis 9 months after the successful resolution of endophthalmitis.[5] However, in the case with uveitis, a repeat ICL implantation was not feasible in view of recurrent inflammatory episodes, and the patient was prescribed contact lens.

We implanted 714 ICLs over the last 10 years. In our case series with 11 cases of ICL explant, 6 cases had undergone a primary ICL implantation in our centre (Table 1).

To conclude, the indications of ICL explant can be varied. Cataract necessitating phacoemulsification is one of the major causes of ICL explant, especially in cases associated with posterior segment pathology. A low incidence of vault related complications was observed, with only 18.2% (2 out of 11) eyes requiring ICL explant for extremely high or shallow vault.

Conflict of interest

The authors declare no conflict of interest.

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