

12. Herschler J. Laser shrinkage of the ciliary processes: a treatment for malignant (ciliary block) glaucoma. *Ophthalmology* 1980;87:1155-9.
13. Spencer AF, Vernon SA. Cycloiodide: results of a standard protocol. *Br J Ophthalmol* 1999;83:311-6.

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Sir,

**Teaching junior ophthalmologists phacoemulsification under topical anaesthesia**

Topical anaesthesia for cataract surgery is now reasonably commonplace. It has been well documented that patients prefer topical anaesthesia to retrobulbar or peribulbar anaesthesia, mainly due to the avoidance of the injection involved.<sup>1,2</sup> In addition, topical anaesthesia results in fewer intraoperative and post-operative complications.<sup>3</sup> Adjunction of topical pre-operative treatment with intracameral lignocaine has been reported to be safe<sup>4,5</sup> and effective; in particular it improves patient co-operation and reduces discomfort caused by tissue manipulation for phacoemulsification.<sup>6</sup> It has been an anecdotal idea that topical anaesthesia is not ideal for teaching trainee ophthalmologists phacoemulsification. We report the results of a prospective audit set up to ascertain whether patients felt excessive discomfort or movement while their cataract operation was being performed by a trainee ophthalmologist, compared with an experienced surgeon.

*Methods*

Patients attending for day case phacoemulsification surgery were divided into two groups: one to be operated upon by the consultant alone and the other to be operated on by a trainee ophthalmologist with assistance from the consultant. The trainee

ophthalmologists had varying levels of surgical experience, from novices to senior registrars. All patients had the same topical anaesthetic pre-operatively: topical 0.75% bupivacaine supplemented by 1 ml of 2% intracameral lignocaine, combined with 1 ml of balanced salt solution. All cataract surgery was performed using a temporal, clear corneal approach, 3.2 mm incision, bimanual phacoemulsification and foldable intraocular lens insertion into the capsular bag. In all supervised cases, the consultant would initiate the procedure up to and including hydrodissection. The trainee would then continue and would proceed until they experienced difficulty progressing to the next stage. The level of operating surgeon and duration of surgery and any per-operative complications were noted.

Immediately after surgery, patients were asked by an independent observer to state whether they felt there had been any discomfort experienced during surgery and, if so, whether this was tolerable or severe. They were also asked at this time whether they felt excessive movement of their eye during surgery. The duration of surgery was compared between groups with the Student's *t*-test. Pain reported after surgery was compared between groups with the Mann-Whitney *U*-test and any difference in the proportion reporting excessive movement during surgery was compared using chi-square analysis.

*Results*

A total of 74 patients were studied. Thirty-seven patients underwent surgery by the consultant and 37 patients by a trainee ophthalmologist. In 2 cases the trainee was a Senior Registrar, in 27 a Specialist Registrar and in 8 a Senior House Officer. More than one trainee surgeon was involved at each level. No patient required additional sedation. The duration of surgery in the group operated on by the trainees was significantly longer (17.9 min) compared with the group operated on by the consultant (11.8 min) ( $p < 0.005$ ). There was no significant difference between the amount of movement or discomfort perceived by the two groups of patients during surgery. The supervised trainees' per-operative complication rate was 2.7%. This appeared to be similar to the rate for the consultant alone but a larger study would be required to verify this.

**Table 1.** *Complications of surgery*

Operating surgeon	Consultant	Trainee
Surgeon's perception of akinesia:		
Adequate	37 (100%)	37 (100%)
Inadequate	0	0
Per-operative complications:	None 36 (97%)	None 36 (97%)
	Posterior capsule tear/vitreous loss 1 (3%)	Posterior capsule tear/vitreous loss 1 (3%)
Mean duration of surgery:	11.8 min	17.9 min
Post-operative complications:	None 35 (95%)	None 35 (95%)
	Uveitis 1 (3%)	Uveitis 1 (3%)
	CMO 1 (3%)	CMO 1 (3%)

CMO, cystoid macular oedema.

**Table 2.** Patient perception of surgery

Operating surgeon	Consultant	Trainee
Discomfort:		
None	25 (68%)	25 (68%)
Tolerable	12 (32%)	11 (30%)
Severe	0	1 (3%)
Excessive movement:		
No	32 (86%)	No 35 (95%)
Yes	5 (14%)	Yes 2 (5%)

### Discussion

Although it has been anecdotally said that topical anaesthesia is not ideal for teaching trainee ophthalmologists phacoemulsification, our study found that although the mean duration of surgery was slightly increased while a trainee was operating, this did not cause a significant difference in patient comfort or their perception of excessive movement. Further randomised prospective trials are required, but our data suggest that in the hands of an experienced teacher, learning phacoemulsification under topical anaesthesia does not significantly affect patient comfort.

### References

- Nielsen PJ, Allerod CW. Evaluation of local anesthesia techniques for small incision cataract surgery. *J Cataract Refract Surg* 1998;24:1136-44.
- Roman S, Auclin F, Ullern M. Topical versus peribulbar anesthesia in cataract surgery. *J Cataract Refract Surg* 1996;22:1121-4.
- Shammas HJ, Milkie M, Yeo R. Topical and subconjunctival anesthesia for phacoemulsification: prospective study. *J Cataract Refract Surg* 1997;23:1577-80.
- Martin RG, Millar JD, Cox CC, *et al.* Safety and efficacy of intracameral injections of unpreserved lidocaine to reduce intraocular sensation. *J Cataract Refract Surg* 1998;24:961-3.
- Masket S, Gofmen F. Efficacy and safety of intracameral lidocaine as a supplement to topical anesthesia. *J Cataract Refract Surg* 1998;24:956-60.
- Crandall AS, Zabriskie NA, Patel BC, *et al.* A comparison of patient comfort during cataract surgery with topical anesthesia versus topical anesthesia and intracameral lignocaine. *Ophthalmology* 1999;106:60-6.
- Johnston RL, Whitefield LA, Giralt J, *et al.* Topical versus peribulbar anaesthesia, without sedation, for clear corneal phacoemulsification. *J Cataract Refract Surg* 1998;24:407-10.

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Sir

### Sixth nerve palsy following epidural spinal cord stimulation for lower limb ischaemia

Epidural dorsal cord stimulation has been used for several years in the treatment of lower limb ischaemia to increase peripheral blood flow and to reduce pain.<sup>1</sup> The

operation encompasses the opening of the thoracolumbar fascia at the lower thoracic level (T 8-12), the epidural placement of an electrode on the dorsal midline or slightly paramedially towards the side of the symptomatic limb and the sutured fixation of the lead to the dura. We would like to draw attention to a sixth nerve palsy that was observed as a complication of this treatment.

### Case report

A 56-year-old man suffering from scleroderma and peripheral limb ischaemia with ulceration underwent epidural dorsal cord stimulation. A few days after the surgical insertion of the electrical lead the patient started to complain of tinnitus and headache. On the fifth postoperative day the patient noted horizontal diplopia which was accentuated when looking to the left. A complete ophthalmic examination revealed a sixth nerve palsy of the left eye. There was no sign of papilloedema and visual acuity remained normal at 6/6. A neuro-ophthalmological investigation showed no involvement of other cranial nerves.

The patient was managed conservatively, and the abducens palsy as well as the other symptoms decreased progressively. After a follow-up of 3 months the patient was free of symptoms, and examination showed a complete recovery of the left sixth nerve palsy.

### Comment

The aetiology of this transient abducens palsy appears to lie in a subclinical leak of cerebrospinal fluid at the site of epidural fixation of the neurostimulator. Sixth nerve palsy has been described as a rare complication after lumbar puncture,<sup>2,3</sup> and the hypothesis has been put forward that the progressive drop in spinal fluid pressure followed by a sagging of the intracranial contents may induce trauma to the sixth cranial nerve where it bends over the angular apex of the petrous bone.<sup>4</sup>

Although rare, the described complication should be kept in mind by physicians involved in the post-operative care and follow-up of patients with chronic limb ischaemia who have undergone epidural spinal cord stimulation.

### References

- Nachbur B, Gersbach P, Hasdemir M. Spinal cord stimulation for unreconstructible chronic limb ischaemia. *Eur J Vasc Surg* 1994;8:383-8.
- Dripps RD, Vandam LD. Longterm follow-up of patients who received 10 098 spinal anesthetics. *JAMA* 1954;156:1486-91.
- Insel TR, Kalin NH, Risch SC, Cohen RM, Murphy DL. Abducens palsy after lumbar puncture. *N Engl J Med* 1980;303:703.
- Fairclough WA. Sixth nerve paralysis after spinal analgesia. *BMJ* 1945;II:801-3.