Treatment of biopsy proved conjunctival intraepithelial neoplasia with topical interferon alpha-2b

Conjunctival intraepithelial neoplasia (CIN) is the most common conjunctival malignancy in the United States. It occurs in exposed areas of the bulbar conjunctiva with frequent involvement of the adjacent corneal epithelium. Recent studies have noted a recurrence rate of about 50% when there is pathological evidence of residual tumour in the surgical margin and a 5–33% recurrence rate with clear margins. We describe two cases of primary CIN successfully treated with topical INFα-2b. This chart review was conducted with a waiver from the Ochsner Clinic Foundation’s institutional review board, and conforms to HIPPA regulations.

**Patient 1**

A 65 year old retired welder was referred for further treatment of a partially resected CIN 1 month earlier. The patient had a long history of ultraviolet light exposure, multiple skin cancers of the face and hands, and tobacco use. He complained of redness and irritation of both eyes. Examination was unremarkable. Slit lamp examination showed a white, elevated, boggy conjunctival/conjunctival lesion with feeder vessels extending 90 degrees along the limbus (fig 1A). A biopsy revealed moderate to severe dysplasia. The patient was treated with INFα-2b (1 million units/ml) four times a day after placement of upper and lower lid punctal plugs. The lesion resolved after 84 days (fig 2B). No recurrence was observed after 3 months of treatment.

Traditional therapy for CIN has involved wide surgical excisions with adjunctive cryotherapy, β radiation, mitomycin C, and 5-fluorouracil. All of these treatments may cause ocular surface inflammation, limbal stem cell deficiency, and epitheliopathy. Combination therapy of intraocular/subconjunctival injections and topical application of interferon effectively treats CIN. However, perilesional interferon has systemic side effects that include transient fevers and myalgias; therefore, topical therapy is preferred. While presumpive treatment of CIN with topical INFα-2b has demonstrated good results, to our knowledge there is only one case series of regression of biopsy proved primary and recurrent CIN with treatment with INFα2b.

Here we report treatment of CIN using INFα-2b that was extremely well tolerated and had minimal side effects. At approximately US$500 per treatment, INFα-2b costs three and two times more than 5-fluorouracil and mitomycin C, respectively. However, the enhanced safety and reduced side effects should offset the additional expense. In conclusion, topical INFα-2b offers an effective alternative for the treatment of primary CIN. Larger population studies will follow up would better assess the risk of side effects or recurrence.

**S Esquenazi, C L Fry, E Holley**

Department of Ophthalmology, Louisiana State University Health Sciences Center, New Orleans, LA, USA

Correspondence to: Solomon Esquenazi, MD, Department of Ophthalmology, Louisiana State University Health Sciences Center, 2020 Gravier Street, Suite B, New Orleans, LA 70112, USA; sesque@lsuhsc.edu

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References


Henoch-Schönlein purpura with keratitis and granulomatous anterior uveitis

Henoch-Schönlein purpura (HSP) is a vasculitis with IgA dominant immune complexes. The small vessel vasculitis is characterised by inflammation and necrosis. We report a case of granulomatous HSP nephritis (HSPN) in association with keratitis and bilateral anterior granulomatous uveitis.

**Case report**

A 42 year old man presented to the casualty department with acute polyarthropathy, purpura, and nephritic syndrome. The urinalysis demonstrated 3+ blood and protein, blood pressure was 152/96, serum creatinine was 110 μmol/l, complement C3 titre was 0.78 g/l (normal 0.88–1.82), and immunoglobulin IgA titre was 4.6 g/litre (normal 0.80–2.80).

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**Figure 1** Patient 1. (A) Clinical appearance of conjunctival squamous cell carcinoma before treatment with INFα-2b. (B) Regression of conjunctival squamous cell carcinoma 70 days after starting treatment with INFα-2b.

**Figure 2** Patient 2. (A) Clinical appearance of CIN before treatment. (B) Complete regression of CIN with topical INFα-2b 84 days after treatment.
He underwent a left native kidney biopsy. Light microscopy demonstrated mesangial proliferative glomerulonephritis with no signs of interstitial nephritis. There was prominent vasculitis with a granulomatous response and fibrinoid necrosis (fig 1), mainly affecting the glomerular arterioles. Immunofluorescence studies demonstrated a predominantly granular staining for IgA and C3. Electron microscopy of the glomerulus demonstrated prominent endothelial cellularity and neutrophil populations, with a number of subepithelial immune complexes.

The clinical and immunopathological findings were consistent with HSPN. His condition responded to oral prednisolone (1 mg/kg), and the laboratory parameters normalized within a 5 month period. The steroid therapy was discontinued and the patient remained systemically well with normal renal function.

One month after remission of the HSPN, he attended the ophthalmic casualty department with a painful right eye. He was treated for a punctate keratitis and corneal epithelial erosion with topical antibiotics and ocular lubricants. This developed into an epithelial ulceration with fibrin arc (fig 1), mainly affecting the glomerular arterioles. Immunofluorescence studies demonstrated a predominantly granular staining for IgA and C3. Electron microscopy of the glomerulus demonstrated prominent endothelial cellularity and neutrophil populations, with a number of subepithelial immune complexes.

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Histopathological examination

Histopathological examination of both lesions showed a relatively well circumscribed lesion situated within the dermis with no connection with the overlying epidermis (fig 1B). The lesions consisted of clusters of malignant epithelial cells with vesicular nuclei and large nucleoli (fig 1C). Foci suggestive of hair follicle differentiation were identified in case 2 (fig 1D). These clusters of malignant epithelial cells were surrounded by a mixed reactive inflammatory cell infiltrate composed predominantly of lymphocytes and plasma cells. Eosinophils and polymorphs were also identified in the inflammatory infiltrate from case 2.

In both cases immunohistochemical staining showed strong positivity for cytokeratins and epithelial membrane antigen in the islands of malignant epithelial cells. Immunohistochemical staining for Epstein-Barr virus was negative.

Comment

LELC, first described in 1988 by Swanson et al., is a rare cutaneous neoplasm that usually presents as a cutaneous nodule of short duration covered by an intact epidermis. The clinical diagnosis is often non-specific such as “lump” or “cyst.” In contrast, the microscopic appearances, as described above, are distinctive.

The histogenesis of LELC is uncertain. Most authors support an adnexal origin.4, 6 This is suggested by the tumour location within the dermis and the absence of a connection with the overlying epidermis. This is further supported by the identification of areas of adnexal differentiation in some tumours, as in case 2.6 Conversely, cases displaying dysplasia in the overlying epidermis have been reported and this is suggestive of epidermal origin for LELC.5

Metastatic disease within the eyelid from underlying primary nasopharyngeal carcinoma (NPC) must be excluded before diagnosing LELC of the skin. The first patient had a history of carcinoma in situ of the larynx. The histology of this was reviewed and confirmed as squamous cell carcinoma in situ without evidence of invasion and there has been no evidence of recurrence on regular follow up. Furthermore, the surface epithelial cells of the laryngeal lesion were morphologically unlike the clusters of malignant epithelial cells seen in the LELC of the eyelid. Both patients also underwent endoscopy of the nasopharynx and no tumour or other abnormalities were identified.

NPC has a strong association with Epstein-Barr virus (EBV) infection. LELC at other sites has rarely been shown to have this association. Similar to those previously reported in the skin, EBV was not identified in either of our cases.6 Other differential diagnoses include anaplastic lymphoma, poorly differentiated squamous cell carcinoma, Merkel cell tumour, and cutaneous lymphadenoma.7 These can usually be discriminated from LELC with immunohistochemistry.

In the small number of cases reported so far, LELC appears to be of low malignant potential with a tendency towards local recurrence but a very low metastatic potential.1 3 4 6 7 Both cases presented have shown no sign of recurrence to date. LELC is a rare but distinctive malignant neoplasm that should be considered in the differential diagnosis of cyst like or nodular lesions of the eyelid.

References


Nylon paper: an alternative to cellulose acetate paper for use in conjunctival impression cytology

Conjunctival imprint cytology (CIC) offers valuable clues to the diagnosis and study of the pathogenesis of conjunctival disorders.5, 10–13 The technique involves the use of a membrane filter paper to pick up a layer of cells from the conjunctival surface.

This study was conducted to evaluate the results of CIC using a nylon filter paper compared to routinely used cellulose acetate paper. It involved 20 normal asymptomatic eyes of 10 participants. The participants had no ocular complaints and they were evaluated to rule out any conjunctival disease. The procedure was explained to the participants and their consent was given.

CIC was done to assess the normal conjunctival cytology using Ultipor (nylon6, 6) and sartorius-type 111 (cellulose acetate paper).

The physical properties such as pore size and thickness of the two papers were matched.

Technique

Cellulose acetate and nylon membrane filters were cut into small triangles and squares respectively to make their identification easy after staining. The conjunctiva was anaesthetised by topical 4% xylocaine. The filter...
paper was applied to the bulbar conjunctiva with blunt forceps. Gentle pressure was applied for 3–5 seconds and the paper was removed in a peeling motion. It was fixed thereafter in 95% ethanol and stained with either haematoxylin and eosin (H&E) or periodic acid Schiff (PAS) and haematoxylin stains. The filter papers after staining were cleared in acetone and xylene, mounted in DPX and viewed under the light microscope. The morphology of epithelial cells in H&E stained cellulose acetate paper was 20 minutes and 35 minutes, respectively, for PAS staining and with H&E stain it was 5 minutes and 10 minutes, respectively. The specimens revealed sheets of small round epithelial cells in H&E stained nylon paper (fig 1A) and cellulose acetate paper (fig 1B). Additional plump, oval, deeply pink PAS positive goblet cells amidst PAS negative cohesive sheet of epithelial cells were seen in Schiff stained specimens on nylon paper. (fig 2).

The cell layer varies from one to several cells thick with occasional gaps where no cells adhere to the membrane filter. Cellulose acetate paper revealed a single layered sheet but the Ultipor showed that there were multiple layers in most places. Occasionally the cells were not picked up or they were clumped so as to be visible as layers. This was seen equally with both the filter papers.

Cells were collected on nylon paper even in presence of lacrimation during the procedure. The cell morphology of specimens collected on either of the filter papers was comparable.

**Comment**

CIC has been in use, as diagnostic tool since 1978, when Egbert first demonstrated its successful use with absorbent filter paper. Before this Thatcher used a plastic device to collect the epithelia. Since then membrane filters like cellulose acetate have been widely used for this technique.

The filtration membrane is a thin, polymeric film made up of microscopic pores. They can be composed of variety of natural and synthetic materials like cellulose acetate and cellulose nitrate in the former category, and PTFE, PVDF, glass fibres, and nylon in the latter.

In this study nylon and cellulose acetate were used for comparison of the results. The nylon paper is more compatible with the organic solvents used in staining procedures. The adsorption is better with nylon then the cellulose acetate paper. Also there is a cost difference between the two, with cellulose acetate paper costing three times that of nylon.

The cytological features of epithelial as well as goblet cells were studied. The goblet cells are identified conclusively by the PAS positive cytoplasm or by their eccentrically placed nuclei and plump shape and large size. The epithelial cells are small and round with eosinophilic cytoplasm. The nuclei are large and basophilic.

Added benefit of nylon over cellulose acetate are:

1. Cost effective
2. Less staining time
3. Ability to collect cell even if lacrimation wets the paper
4. Comparable morphological results to cellulose acetate
5. Compatible with variety of solvents hence more stable
6. Deeper layers also picked, hence detailed evaluation of biopsy.

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M K B Meena, A Khuteta
Department of Ophthalmology, SMS Hospital, Jaipur, India

H Saxena
Department of Pathology, SMS Hospital, Jaipur, India

Correspondence to: Dr Monisha K Brijlal Meena, Department of Ophthalmology, SMS Hospital, Jaipur, India, dr_ophthal@yahoo.co.in

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**References**


"C-scan" ultrasound imaging of optic nerve extension of retinoblastoma

Three dimensional ultrasound based coronal "C-scan" imaging technique was used to demonstrate optic nerve extension of retinoblastoma. With a clinical diagnosis of retinoblastoma based on clinical evaluation, ultrasound, and computed radiographic tomography, this patient was treated by primary enucleation. Subsequent histopathological evaluation of the enucleated globe revealed three risk factors for metastatic retinoblastoma (including optic nerve extension). Both systemic chemotherapy and orbital radiation therapy were employed.

Case report

A 2 year old black female presented with a 1 month history of conjunctival vascular dilation, leukocoria, strabismus, and ptosis involving the right eye. Slit lamp examination revealed a yellow-white tumour filling 70% of the anterior chamber and obscuring view of the posterior segment (fig 1A).

High frequency ultrasonography (35 MHz) demonstrated the presence of tumour cells in both the anterior and posterior chambers, as well as the vitreous (fig 1B). Three dimensional B-scan ultrasonography (3DUS) (12 MHz) revealed a mushroom-shaped retinal detachment and a large endophytic retinoblastoma with orbital shadowing. A V-shaped widening of the optic nerve shadow as it exited the globe was noted (fig 2A). Preoperative coronal C-scan ultrasound views of the optic nerve also demonstrated an enlarged optic nerve sheath diameter (ONSD) (fig 2C). This finding was consistent with full thickness retinoblastoma infiltration of the optic nerve fibre bundles as seen on histopathology (coronal sectioning of the distal end of the transected optic nerve) (fig 2D).

Subsequent MRI of the brain and lumbar cerebrospinal fluid cytology were interpreted to be normal.

Comment

Retinoblastoma can invade the optic nerve. Though the entire optic nerve is best evaluated by CT or MRI, 3DUS C-scan imaging has recently been found to be capable of measuring the ONSD. These measurements have been reported from normal healthy subjects and approximate normative values by CT or MRI reports. This technique has also been used in clinical assessment of optic nerve sheath meningiomas. The relative cost of a three dimensional ophthalmic ultrasound machine is far less than a CT and even less than MRI. Consider that CT and MRI require shielded rooms. Ultrasound examinations are typically shorter than CT or MRI, the ultrasound machine is more mobile, less personnel intensive, and does not require contrast agents.

Optic nerve measurements are based on 3DUS generated coronal C-scan images derived from 97 successive B-scans recorded at 2 degree intervals around the axis of the nerve. Utilising a representative C-scan image of the nerve, one can trace its outline and obtain an average measurement of the enclosed area. This image is carefully selected from a series of consecutive coronal images of the nerve at a predetermined distance behind the globe. A good correlation between ONSD measurements by C-scan imaging and MRI has been reported. The normal ONSD found in healthy adults ranges from 3.9–6 mm by 3DUS, whereas the normative measurement in cadaver eyes is 4 mm.

In this case of retinoblastoma, the measurement obtained 1.5 mm behind the globe

Figure 1 (A) External photograph of the anterior segment filled with retinoblastoma. (B) 35 MHz high frequency ultrasound demonstrates tumour cells in both anterior and posterior chambers, and anterior vitreous (arrowhead).

Figure 2 (A) Three dimensional ultrasound (12 MHz) reconstruction demonstrates a longitudinal view of the V-shaped and widened optic nerve shadow (retinoblastoma infiltrated) as it exits the eye (arrow). Intratumoral calcification (arrowhead) with orbital shadowing (asterisk) consistent with retinoblastoma was noted. (T, temporal, P, posterior, I, inferior). (B) Histopathological evaluation reveals a similar V-shaped, retinoblastoma induced bulging of the optic nerve (arrow) posterior to the globe secondary to diffuse tumour infiltration (haematoxylin and eosin, original magnification, ×40). (C) A posterior coronal C-scan image shows an enlarged optic nerve sheath diameter (ONSD) of 6.4 mm (circle). The dark area just superotemporal to the nerve is orbita shadowing caused by retinoblastoma. (D) Higher power view shows a cross section of the distal end of the optic nerve (average ONSD 4.5 mm) with full thickness infiltration by retinoblastoma (haematoxylin and eosin, original magnification, ×100).
was 6.4 mm by 3DUS, and 4.5 mm by histopathology (similar discrepancies have been related to fixation). In this 2 year old patient, both measurements were larger than normal as a result of the mass effect of infiltrated retinoblastoma cells.

Coronal C-scan ultrasound imaging is a new, effective, and relatively inexpensive method to screen for the increased ONSD associated with optic nerve extension of retinoblastoma.

P T Finger
The New York Eye Cancer Center, New York, USA

J P S Garcia Jr, P T Finger, M J Pro, S Schneider
The New York Eye and Ear Infirmary, New York, USA

J P S Garcia Jr, S Schneider
New York Medical College, New York, USA

P T Finger, A Rausen
New York University School of Medicine, New York, USA

Correspondence to: Paul T Finger, MD, FACS, The EyeCare Foundation, Inc and Research to Prevent Blindness, New York, USA.

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References

Non-cicatricial upper eyelid ectropion

We present three rare cases of non-cicatrising upper lid ectropion, seen in two oculoplastic units.

Case 1
A 92 year old man with progressive dementia presented with a left upper lid ectropion, which could not be repositioned manually. The patient was of normal weight and had no history of obstructive sleep apnoea (OSA), joint laxity, or skin laxity. An injected, oedematous and hypertrophied upper lid tarsus was noted (fig 1A), but no obvious chronic staphylococcal changes. There was no evidence of anterior lamella cicatrisation (fig 1B and 1C). Moderate to severe horizontal laxity of the left upper eyelid and significant laxity of the left lateral canthal tendon (10 mm medial distraction) were noted. On the right side there was an aponeurotic piosis, with a milder degree of horizontal laxity and lateral canthal tendon laxity (6 mm medial distraction). There was no evidence of enophthalmos. Conservative treatment with an eye shield, lubricants and topical steroids resulted in no improvement and the everted tarsus failed to remain in the correct position when manual repositioning was attempted. The patient underwent a left upper lid lateral full thickness pentagonal wedge resection of 15 mm, and levator aponeurosis reattachment, with no recurrence of ectropion after a 5 month follow up period.

Case 2
A 49 year old man with obesity and OSA, presented with a constant right upper and lower lid ectropion with a severely injected and hypertrophied conjunctiva (fig 2A). He reported usually sleeping on his right side. On examination there was significant horizontal lid laxity of upper and lower lids, as well as of the lateral canthal tendons bilaterally, but no cicatrisation of the anterior lamella. There was marked piosis on the right and normal levator function. The everted right upper eyelid could not be manually repositioned and there was marked oedema and inflammation of the upper tarsal conjunctiva. He was diagnosed with a floppy eyelid syndrome and right upper and lower lid ectropion, and underwent a right lower lid lateral tarsal sling and a bilateral upper lid lateral full thickness pentagonal wedge resection (10 mm) and blepharoplasty. Several months later, he underwent a right aponeurotic piosis repair and a second upper lid lateral wedge resection (5 mm) with horizontal tightening for residual upper lid ectropion. No recurrence was noted over a 48 month follow up period (fig 2B).

Case 3
A 90 year old woman with early senile dementia presented with a right upper eyelid tarsal ectropion which could not be repositioned manually. She denied any history of OSA or eye rubbing and had no significant joint or skin laxity. She was not overweight or overweight for her height and there was no enophthalmos. The everted tarsus was markedly injected and hypertrophied, but no obvious chronic staphylococcal changes were seen and no cicatrisation of the anterior lamella was noted. In addition, she had a history of obstructive sleep apnoea (OSA), joint laxity, or skin laxity. An injected, oedematous and hypertrophied upper lid tarsus was noted (fig 1A), but no obvious chronic staphylococcal changes. There was no evidence of anterior lamella cicatrisation (fig 1B and 1C). Moderate to severe horizontal laxity of the left upper eyelid and significant laxity of the left lateral canthal tendon (10 mm medial distraction) were noted. On the right side there was an aponeurotic piosis, with a milder degree of horizontal laxity and lateral canthal tendon laxity (6 mm medial distraction). There was no evidence of enophthalmos. Conservative treatment with an eye shield, lubricants and topical steroids resulted in no improvement and the everted tarsus failed to remain in the correct position when manual repositioning was attempted. The patient underwent a left upper lid lateral full thickness pentagonal wedge resection of 15 mm, and levator aponeurosis reattachment, with no recurrence of ectropion after a 5 month follow up period.
bilateral medial lower lid ectropions with moderate to severe horizontal lid laxity of upper and lower lids, as well as the lateral canthal tendons (10 mm medial distortion). The patient did not respond to conservative treatment with lubricants and topical steroids, and she underwent right upper lid ectropion repair with a lateral full thickness periconjunctival wedge excision (15 mm) and levator aponeurosis reattachment. No recurrence was noted after a 6 month follow up period.

Comment

We have described three patients with an unusual presentation of a non-cicatrising constant upper lid ectropion. Correcting the upper lid laxity with a full thickness penta- gonal wedge resection and horizontal tightening resulted in a good outcome in all patients.

Upper lid ectropion is not common. In newborns, it is usually temporary and responds to conservative measures. Less commonly, it may result from shortage of anterior lamella, as in blepharophimosis syndrome and congenital ichthyosis. A recent report found mild degrees of upper lid eversion in a series of patients with multiple endocrine neoplasia type 2B. Upper lid ectropion in adults usually results from pathologies affecting the anterior lamella such as chronic sun damage, irradiation, chronic dermatitis, skin infections, ichthyosis, chemical burns, and previous surgery. In patients with the floppy eyelid syndrome the spontaneous upper lid eversion usually occurs during night sleep and is easily repositioned manually. In a recent report, Burkat and Lember described 80 patients with acquired lax eyelid syndrome who were treated with the four eyelid tarsal strip periostal flap technique. Although all patients had significant horizontal laxity, none of them had spontaneous upper lid eversion. While spontaneous upper eyelid eversion may occur in conditions such as floppy eyelid syndrome or lax eyelid syndrome which induce sufficient lid laxity, manual repositioning is generally possible. In all our patients the ectropion remained constant and could only be corrected surgically. Only patient 2, who was the youngest, was diagnosed with the floppy eyelid syndrome. The other two were older, had no systemic signs of the floppy eyelid syndrome, and the eyelid changes appeared to be age related.

We believe that the marked horizontal laxity was the main causative factor causing upper lid ectropion in our cases, but poor levator muscle function, dehiscence of the aponeurosis and involutional tarsal changes may further contribute to tarsal instability and upper lid eversion. Two of the patients in our series had significant demen- tia, and frequent eye rubbing resulting in conjunctival fornical oedema with tarsal conjunctival oedema and inflammation, may have been a factor in preventing repositioning of the evverted tarsus. In the case of the patient with floppy eyelid syndrome, traumatic irritation during sleep may have led to sufficient tarsal conjunctival oedema and inflammation to prevent repositioning of the eyelid.

I Leibovitch, G Davis, D Selva
Oculoplastics and Orbital Unit, Department of Ophthalmology, Royal Adelaide Hospital, Australia

References


MAILBOX

Sub-Tenon’s block versus topical anaesthesia for cataract surgery

We read with great interest the article by Ruschen et al comparing patient satisfaction during cataract surgery with sub-Tenon’s block (STB) versus topical anaesthesia (TOP). The authors concluded that in the setting of day case cataract surgery, patients reported significantly higher satisfaction scores with STB than TOP.

We would like to raise two issues for discussion. Firstly, the lower satisfaction score in the TOP group may only reflect a suboptimal TOP that was given in the current study and may not be generalisable to other study settings and may not be generalisable to other study settings and may not be generalisable to other study settings. In our experience, lignocaine gel (lidocaine hydrochloride 2%, AstraZeneca, Sweden) produces significantly better anaesthetic effects than local anaesthetic eye drops. Lignocaine gel has been previously shown to be an effective and possibly a more superior anaesthetic agent in cataract surgery, as well as giving better patient cooperation with less intraoperative supplement. To further evaluate the apparent lower satisfaction scores with TOP than STB, we would be grateful if the authors could provide the details of their TOP anaesthetic procedure. For example, how long before the actual surgery were proparacaine and amethocaine given and whether supplementary anaesthetic eye drops were allowed during the surgery.

Secondly, even though the median satisfaction score in the TOP group was significantly lower than that of the STB group, there was a much larger variation in the TOP group (fig 1). This would imply some patients were satisfied while some were dissatisfied. We certainly believe not all patients can tolerate TOP and it would be highly desirable for cataract surgeons to identify the latter group preoperatively. Were there any specific characteristics in this group showing such dissatisfaction? Moreover, we noted that there were more females (12 out of 14 patients) in the TOP group, compared to the STB group (five out of 14 patients). This difference was statistically significant (p = 0.018, Fisher’s exact test). We recognise that randomisation had been implemented in the present study and any significant differences in patients’ demographics were beyond the control of the authors. However, such difference might have impacted the satisfaction scores, as it is known that women have high rates of physical symptom reporting.

None the less, we do commend the authors’ work on this important topic. We agree with the authors that sub-Tenon’s anaesthesia may be a better choice in some patients undergoing cataract surgery. However, other forms of topical anaesthesia may produce equally good, if not better, patient satisfaction especially in selected patients.

A C O Cheng, H K L Yuen, R F Lam, D S C Lam
Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong, 3/F, Hong Kong Eye Hospital, 147K Argyle Street, Kowloon, Hong Kong

Correspondence to: Dennis S C Lam, Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong, 3/F, Hong Kong Eye Hospital, 147K Argyle Street, Kowloon, Hong Kong; dennislasm_pub@cuhk.edu.hk
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Figure 1 Box and whisker plot of satisfaction score with sub-Tenon’s block or topical anaesthesia. (From Rüsch en et al)

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We read with great interest the article by Ruschen et al comparing patient satisfaction during cataract surgery with sub-Tenon’s block (STB) versus topical anaesthesia (TOP). The authors concluded that in the setting of day case cataract surgery, patients reported significantly higher satisfaction scores with STB than TOP.

We would like to raise two issues for discussion. Firstly, the lower satisfaction score in the TOP group may only reflect a suboptimal TOP that was given in the current study and may not be generalisable to other forms of TOP. In our experience, lignocaine gel (lidocaine hydrochloride 2%, AstraZeneca, Sweden) produces significantly better anaesthetic effects than local anaesthetic eye drops. Lignocaine gel has been previously shown to be an effective and possibly a more superior anaesthetic agent in cataract surgery, as well as giving better patient cooperation with less intraoperative supplement. To further evaluate the apparent lower satisfaction scores with TOP than STB, we would be grateful if the authors could provide the details of their TOP anaesthetic procedure—for example, how long before the actual surgery were proparacaine and amethocaine given and whether supplementary anaesthetic eye drops were allowed during the surgery.

Secondly, even though the median satisfaction score in the TOP group was significantly lower than that of the STB group, there was a much larger variation in the TOP group (fig 1). This would imply some patients were satisfied while some were dissatisfied. We certainly believe not all patients can tolerate TOP and it would be highly desirable for cataract surgeons to identify the latter group preoperatively. Were there any specific characteristics in this group showing such dissatisfaction? Moreover, we noted that there were more females (12 out of 14 patients) in the TOP group, compared to the STB group (five out of 14 patients). This difference was statistically significant (p = 0.018, Fisher’s exact test). We recognise that randomisation had been implemented in the present study and any significant differences in patients’ demographics were beyond the control of the authors. However, such difference might have impacted the satisfaction scores, as it is known that women have high rates of physical symptom reporting.

None the less, we do commend the authors’ work on this important topic. We agree with the authors that sub-Tenon’s anaesthesia may be a better choice in some patients undergoing cataract surgery. However, other forms of topical anaesthesia may produce equally good, if not better, patient satisfaction especially in selected patients.

A C O Cheng, H K L Yuen, R F Lam, D S C Lam
Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong, 3/F, Hong Kong Eye Hospital, 147K Argyle Street, Kowloon, Hong Kong

Correspondence to: Dennis S C Lam, Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong, 3/F, Hong Kong Eye Hospital, 147K Argyle Street, Kowloon, Hong Kong; dennislam_pub@cuhk.edu.hk
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Patient satisfaction with anaesthesia comparing sub-Tenon’s block and topical anaesthesia

We read with great interest the results of the pilot study comparing patient satisfaction between topical and sub-Tenon’s anaesthesia. In contrast to the authors state that sub-Tenon’s block produces higher satisfaction scores than topical anaesthesia.1 The scores used were obtained using the Iowa Satisfaction with Anesthesia Scale (ISAS), which has been used many times during other forms of surgery.1 However, the ISAS has not been used in the setting of monitored anaesthetic care and has not as yet been fully validated in a purely local anaesthetic environment. Dexter, who was part of the team that developed the ISAS, has said that the ISAS is still to be validated in this setting. Therefore, we would suggest that the conclusions that sub-Tenon’s anaesthesia produces a better satisfaction than topical anaesthesia, purely based on this scale, is slightly premature. The ISAS is due to be validated soon using local anaesthesia and sedation; however, it is still used specifically during monitored anaesthetic care and is as yet not tested on unmonitored anaesthetic care, which is often found during topical cataract lists.

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3 Feng D, Cohen M, Stewart S, et al. Can the Iowa Satisfaction with Anaesthesia Scale be used to measure patient satisfaction with cataract surgery under topical local anaesthesia and monitored sedation at community hospital? Anesthesia Analgesia 2005;100(6)

Cataract surgery and IOP

We would like to congratulate Issa et al. on their excellent and, we believe, important paper regarding cataract surgery and intraocular pressure drop.

It has become increasingly obvious to us, in our practice, that many patients do indeed get a significant drop in intraocular pressure (IOP) after phacoemulsification. We now have a substantial number of patients with both acute and chronic angle closure who, following cataract surgery, have been able to come off all antihypertensive medications. We would normally say that to say that these patients is now the operation of choice (when medical therapy has deemed to have failed) and this is supported by a number of studies.2 There is also the added benefit of a reduction in the incidence of aqueous misdirection.

It is interesting that Issa et al. used “normal” patients in their study and still found a significant reduction in IOP. We have thought for sometime that a number of glaucoma patients who, on gonioscopy, are seen to have "open angles" but on closer inspection have some (usually central) anterior chamber shallowing, often seem to have profound drops in their IOP following cataract surgery. Although many of these patients have degrees of hypermetropia, this is not always the case. Indeed with increasing nuclear sclerosis some may be myopic at presentation.

The authors rightly state that their study needs to be repeated by others to confirm their results. We think that lens thickness has more of a role than this study suggests. There is an important flaw—acknowledged by the authors—regarding the lack of data on corneal thickness. Any future studies need to correct for this, not only to allow a more accurate assessment of the IOP, but because the cornea itself is part of the anterior structure of the eye and not necessarily an independent variable.

Finally, we speculate that there is likely to be a measurable relation between IOP, volume of the anterior segment, lens size, and possibly corneal thickness. Once we have quantified this it may then allow us not only to be able to assess the likely magnitude of IOP drop after phacoemulsification, but will give an essential insight into some of the underlying mechanisms of raised IOP.

References


Normal tension glaucoma

I enjoyed the recent study by Ogata et al., in which they attempted to assess the interrelation between intracranial vascular compression and the optic nerves and normal tension glaucoma.1 Coronal magnetic resonance images of the optic nerves were used to assess the degree of compression of the intracranial optic nerves and the supraciliary internal carotid arteries. Compression of an optic nerve by a normal internal carotid artery was found in 51 of 103 eyes (49.5%) of patients with normal tension glaucoma and in 36 of 104 (34.6%) eyes of control patients. The degree of compression was noted to be greater in patients with normal tension glaucoma. These findings led the authors to conclude that one cause of normal tension glaucoma may be compression of the optic nerve by the internal carotid artery.

As noted in the discussion, Jacobson et al. found compression of the intracranial optic nerve by the internal carotid artery to be common in asymptomatic patients (bilateral contact in 70%, bilateral compression in 5%, unilateral contact or compression in 5%).1 In symptomatic patients, Jacobson noted glaucomatous visual field defects and “saucer-like temporal excavation” of the optic disc on the side of the compression.1 Symptoms of patients also had temporal neuroretinal rim pallor and other signs of compressive optic neuropathy such as decreased visual acuity and decreased colour vision, thereby distinguishing them from patients with normal tension glaucoma.4

In the Ogata study, inclusion of three additional outcome measures would be useful in defining any association that may exist between intracranial optic nerve compression and pseudoglaucomatous cupping. Firstly, did patients with normal tension glaucoma and intracranial optic nerve compression have decreased visual acuity, decreased colour vision, or associated pallor of the temporal neuroretinal rim on the side of the compressed optic nerve? Secondly, was the observed cupping in eyes with normal tension glaucoma and optic nerve compression of vertical orientation (that is, supraciliary or horizontal or round that is, non-glaucomatous), and did this configuration differ in eyes without optic nerve compression? Finally, was the diagnosis of normal tension glaucoma confined to the temporal side in the nine patients with unilateral optic nerve compression, as the study hypothesis would predict?

References

3 Jacobson DM. Symptomatic compression of optic nerve by the internal carotid artery.
Vision restoration therapy

A recent paper and accompanying editorials \(^1\) in the BJO have raised the question of whether vision restoration therapy is effective in the rehabilitation of visual field defects. As members of the scientific medical advisory board of NovaVision, we believe these editorials require comment and refer the interested reader to an opposing editorial in a recent issue of the BJO by Sabel and colleagues \(^2\) and to an article in press in Restorative Neuroscience\(^3\). Although we acknowledge that statements by members of an advisory board are always complicated by potential conflicts of interest, we hope that our colleagues will recognise our commitment to scientific debate.

We believe the current evidence does not support Horton’s contention that “no therapeutic intervention...can correct effectively the underlying visual field deficit” after post-chiasmic injury. On the contrary, a comprehensive and critical review of the literature reveals that there is a sound scientific basis for recommending vision restoration therapy for some patients with hemianopia. Studies of the practical effectiveness and scientific basis of vision restoration therapy are now ongoing, and patients are being treated at nine US centres. We urge physicians and scientists to review the current literature and the results of future studies as they become available. Although there are clearly important questions regarding this intervention that need to be elucidated, it is evident that the main goal, that of visual rehabilitation, is attained for some of those treated with vision restoration therapy. In our opinion, the preponderance of the data supports the notion that this intervention is valuable and results in visual improvement for certain patients with visual field defects.

J G Romano
Cerebrovascular Division, University of Miami, FL, USA
N Schatz
Bascom Palmer Eye Institute, Miami, FL, USA

Disclosure: The authors are members of the Scientific and Medical Advisory Board of NovaVision, the company that has developed vision restoration therapy.
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References

NOTICES

EVER 2005 meeting
This will take place on 5-8 October 2005 in Vilamoura, Portugal. For further details please contact: Christy Lacroix, EVER Secretary, Kapucijnenover 33, B-3000 Leuven, Belgium (tel: +32 (0)16 233 849; fax +32 (0)16 234 097; email:ever@skynet.be).

World Ophthalmology Congress 2006 – Brazil
The World Ophthalmology Congress (which is replacing the International Congress of Ophthalmology) is meeting in February 2006 in Brazil.
For further information on the congress and committees, scientific program and coordinators of different areas are available at the congress website www.ophthalmology2006.com.br

Red eye
The latest issue of Community Eye Health (No 53) discusses the role of primary care in the treatment of red eye. For further information please contact: Journal of Community Eye Health, International Resource Centre, International Centre for Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK (tel: +44 (0)20 7612 7964; email: Anita.Shah@lshtm.ac.uk; online edition: www.jech.co.uk). Annual subscription (4 issues) £28/US$45. Free to developing country applicants.

ORBIS introduces surgical simulator to train ophthalmologists across developing world
International development agency, ORBIS, is using a high-tech ophthalmic surgical simulator for the first time this month, as part of its Flying Eye Hospital training programme in Varna, Bulgaria (8-24 June). The ‘Eyes-1’ training system will be used by ORBIS to help train eye specialists in developing countries in the latest surgical techniques to prevent and treat avoidable blindness.

Through its work as an international development agency ORBIS has completed over 500 training programmes in 76 countries and has established permanent country programmes in five nations - Bangladesh, China, Ethiopia, India, and Vietnam. Since 1982 ORBIS volunteers have treated more than 25000 patients and trained over 70000 medical professionals.

The Eyes-1 surgical simulator was created by VRmagic Technology Group in 2002, a German company specialising in image processing and display technology.

For further information or contributions of any kind please call +44 (0)20 7670 7260 or visit www.ukorbis.org

4th International Conference on Ocular Infections
This will take place on 1–4 October 2005 in Hokkaido, Japan. For further information please contact the Management Secretariat, ic02005@convention.co.jp.

Thoughts on Ophthalmology and Development
The Matius Eye Foundation is a small, privately-financed organisation, established 17 years ago by a former international banker who began his medical studies at age 40 with the specific intention of working in third world surgical ophthalmology. The Foundation’s experiences and lessons learned are presented in a 26 page bound summary entitled Thoughts on Poor World Ophthalmology Development, an often critical look at eye surgery programs in Latin America, Africa, and Haiti. To obtain this report without cost, please contact: jheathery@taylormathis.com.

A Firlik
New York University School of Medicine, NY, USA
N J Newman
Emory University School of Medicine, Atlanta, GA, USA
M Pless
Neurology and Neuro-Ophthalmology, Northeast Health System, USA
L R Caplan
Department of Neurology, Beth Israel Deaconess Medical Center, Boston, MA, USA

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