Use of a Wick to Deliver Pre-Cataract Surgery Medications

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Introduction

• Currently at Bowen Hospital we use an eye wick to dilate pupils before cataract (and selected vitreo-retinal) surgery.

• Use of the wick impregnated with dilation medication has proven to be a cost effective way of preparing patients for surgery.
Background

- Standard technique for dilation consisted of a pre-op dosing regime of drops every 15 minutes.

- Following presentation of technique at ACORN congress 2005 by Mackay Day Surgery QLD, our theatre was interested in concept.

- Incentive to adopt technique came when we won a DHB contract to do 200 cases (with lists of approximately 25 patients) ...in a little over a month.
Background

- The process was introduced to help the day unit staff in managing large lists.
- For over a year now we have been using an absorbent wick to deliver the Mydriatic and other pre-operative medications for selected lists.
- It has resulted in cost savings in materials and staffing time and has also resulted in a more comfortable experience for the patients.
## Materials Utilised

<table>
<thead>
<tr>
<th>Sterile equipment</th>
<th>1 x disposable scissors</th>
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<tbody>
<tr>
<td></td>
<td>1 x disposable forceps</td>
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<tr>
<td></td>
<td>1 x specimen pot</td>
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<tr>
<td></td>
<td>1 x gloves</td>
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<td></td>
<td>1 x eye wick</td>
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<tr>
<td>Medications – all minims (can vary according to surgeon preference)</td>
<td>1 x Tropicamide 1%</td>
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<td></td>
<td>1 x Phenylephrine 2.5%</td>
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<tr>
<td></td>
<td>1 x Diclofenac (Voltaren Ophtha)</td>
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<td>1 x Benoxinate per patient</td>
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</tbody>
</table>
Materials Utilised
Prepare Wick

- Strict aseptic technique
- Cut wick into 5-6mm lengths into sterile specimen pot
- Squirt content of each minim (except the benoxinate) into specimen pot and make sure each wick is soaked in resulting solution
Preparing Wick
Process from admission

- On admission 2 drops of Benoxinate (Oxybuprocaine) are put into operative eye at beginning of pre-operative interview
- Wick is then inserted in lower fornix using sterile disposable forceps
- Eye is taped shut with small tegaderm
- Wick is removed after 45-50 mins by day unit staff or theatre staff
Insertion Technique

- Ask patient to look up
- Pull lower lid down
- With sterile forceps place eye wick in lower fornix
- Replace forceps in packet so they can be used for removal of wick
Insertion Technique

- Eye is then taped shut
- Use whatever you find is best we use a small tegaderm gives good ‘stickability’ while still easy to peel off without damaging delicate skin
Removal

- Ask patient to look up
- Pull lower lid down
- In most cases wick ‘presents’ itself ready to be removed
- Remove with forceps used to place wick
Results

- Standing order produced for each of the surgeons who support technique
- Good dilation of pupils even after only 15 mins of application
- Patients more comfortable
- Cost effective
Results: Standing Orders

**Mackay Day Surgery**

Dilating wick 1 minim each
- Cyclopentolate 0.5%
- Tropicamide 1%
- Phenylephrine 2.5%
- Voltaren 0.1%

Dosage regime
50 mins pre op 2 drops benoxinate
45 mins 1 wick inserted to eye
15 mins remove wick

**ADAPTATION FOR Dr Steve Mackey**

Dilating wick 1 minim each
- Tropicamide 1%
- Phenylephrine 2.5%
- Voltaren 0.1%

Dosage regime
50 mins pre op 2 drops benoxinate
45 mins 1 wick inserted to eye
15 mins remove wick
Timings are only approximate as list will often proceed quicker. Wick will be removed in theatre if required
Result: Good Dilation

- Dilation after 20 minutes
Results: **Comfort**

- Initial cohort of patients (approx 50) all reported preferring new technique (wick) to previous drop regime.
- No instances of corneal abrasion on post operative examination.
- No instances of infection.
## Costs Per List Setup

(Fixed Costs)

- Sterile gloves $1.20
- Sterile specimen pot $1.15
- Sterile eye wick $5.93
- Sterile disposable scissors $2.65
- Minims - Tropicamide 1% $1.80
- Phenylephrine 2.5% $1.80
- Diclofenac (Voltaren Ophtha) $0.90
- Per list total $15.23
## Costs Per Patient Setup

(Variable Costs)

- Benoxinate Minim $2.08
- Forceps $0.35
- Tegaderm (1644w) $0.50
- Total per patient $2.93
Results: Total Cost Per Patient

- Depends on size of list (traditional prep with three minims per patient cost $5.40)
- For 6 patients costs of prep are $5.52 per patient
- For 8 patients $4.50
- For 10 $4.48
Conclusions:

- Per patient direct costs are not the complete measure however

- Significant time savings for Day Staff have resulted, with reduction in Nurse/Patient contacts for just prep administration from 4-5 contacts to 2

- Allows more/quality time to do the important stuff – patient care
References

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- Kirby, H. Report on use of eye wicks with ophthalmic medication for dilation of pupils before cataract surgery at Mackay Day Surgery, Day Surgery Australia Jul 2004, 4, 2, 6-7
- Ong-Tone, L. Use of a wick to deliver preoperative mydriatics for cataract surgery, Journal for Cataract and Refractive Surgery Nov 2003, 29, 2060-2062
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