Eyelights

The Newsletter of GLAUCOMA NZ TO SAVE SIGHT

About Glaucoma New Zealand

Volume 2, Issue 4

November 2005

Glaucoma NZ organised a very successful awareness campaign in August: The Mayors For Sight campaign. 62 Mayors participated in "Mayors for Sight" at 45 venues throughout New Zealand. Each Mayor had an eye examination by a local optometrist at an event attended by the media. Members of Glaucoma NZ were invited to give the patient's perspective, Lions clubs were represented, and most events had an eye specialist attending as well. The events were hosted by Optometrist's throughout the country and we thank them for their support. Local coverage of these events was helpful in spreading the message in our community that an eye examination is essential to detect early or even advanced and silent glaucoma. There is no simple, cheap, shortcut method to adequately detect glaucoma. The additional benefit of an examination is that it may reveal other eye problems.

We are very grateful to all those who contributed their time and expertise to the campaign. By "attacking" the Mayors we demonstrated the practical nature of glaucoma screening in our communities, right where it must occur. Many local newspapers gave the event front page coverage. In some areas of New Zealand Radio and TV interviews both preceded and followed the screening. Everyone likes to know when something is happening and Glaucoma NZ, with the help of our supporters, made it happen!

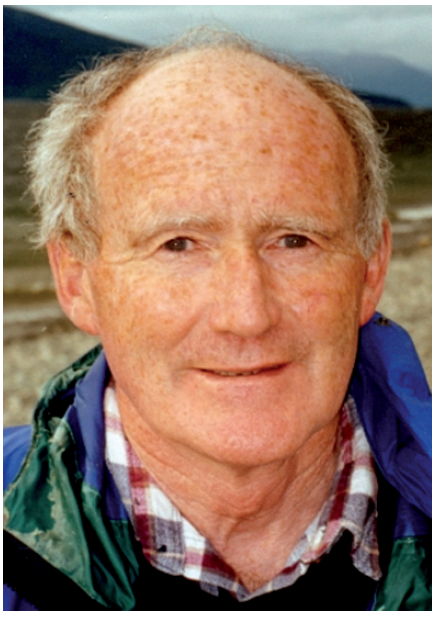
Our glaucoma awareness activities for 2005 included our public meetings and all that is linked to those events, fund raising in the Auckland Marathon, and "Mayors for Sight". We will be looking at new and innovative awareness activities for 2006. Your own ideas for awareness in your community are very welcome.

Now is a busy time for everyone as we prepare and plan for the holiday season, but when you are relaxing over the summer break, send a letter, fax or email to Gael if you have ideas that you would like to share with us. Meanwhile we wish you the very best for the festive season and look forward to bringing you the next issue of Eyelights early in 2006.

Inside this issue:

Glaucoma's Southern Man

If you attend a glaucoma conference anywhere in the world and mention the name Anthony Molteno, the delegates will know immediately who you are talking about, particularly if the subject of the conference is glaucoma surgery. Professor Anthony Molteno is a South African born ophthalmologist who came to live in New Zealand in 1977.



He works for the University of Otago, Dunedin School of Medicine and has developed one of the most successful operations for the surgical treatment of glaucoma. It carries his name; it is known the world over as the Molteno implant. As you would expect, with any successful innovation, since he developed it a number of people have tried to copy it; but research as recently as last year has shown that the Molteno implant is still one of the best, if not 'the' best implant for the surgical management of glaucoma.

In 1998 he was honoured by the international glaucoma community by being awarded the Goldmann Medal. The Goldmann Medal is named after Friedrich Goldmann who was a famous Swiss ophthalmologist responsible for inventing among other things the applanation tonometer, which is still widely used for measuring intraocular pressure. This medal was struck to recognise any ophthalmologist throughout the world who has made a significant contribution to glaucoma. Anthony Molteno is only the second recipient ever of this medal.

New Zealand is most fortunate to have an ophthalmologist and in particular a glaucoma specialist of his calibre who is still actively engaged in research and still acknowledged throughout the world as a leader in this field. He continues to treat glaucoma patients in Dunedin Hospital. As you would expect he has contributed many scholarly articles to medical and ophthalmic journals. His database of over 1500 surgical cases is one of the largest in the world and his long term follow-up study of surgical outcomes has run longer than any other. He has also written several chapters in glaucoma and ophthalmology textbooks.

Professor Molteno has many other innovations to his credit but it is for his work in glaucoma that he is best known and deservedly so. He is married and lives with his wife Tess in one of Dunedin's hill suburbs overlooking the city. He has three extremely successful children, one of whom is a GP in Auckland.

Moving House?

Don't forget to include Glaucoma NZ when you are doing your change of address cards. Remember, we have no way of knowing your new address if you don't tell us!

Focus on Research - Molteno Implants

Glaucoma, as most people who read this article will be aware, is normally associated with raised intraocular pressure. The usual strategy for managing glaucoma is to lower the intraocular pressure by either the use of medication, or surgery.

Medication is normally used first and surgery used as the next resort, or as a complementary treatment combined with medical management. The surgery to reduce the intraocular pressure can take a variety of forms, but simply put it is a matter of creating a drainage channel referred to as a fistula, to enable aqueous fluid to drain out of the eye in a controlled fashion.

It is important, in order to retain the rigidity of the eye, that a certain level of intraocular pressure is maintained. If the aqueous just flowed out of the eye in an uncontrolled fashion the eye would literally collapse. Furthermore if the aqueous outflow was open to the air a potential site for infection would be created.

One of the "art forms" of glaucoma surgery is to succeed in the balancing of the release of aqueous, which in turn lowers the intraocular pressure without at the same time decreasing the pressure too much. Obviously if the surgeon miscalculated and the drainage was too great the pressure would be too low and conversely, if the drainage was not sufficient then the intraocular pressure would remain too high. All of this must be achieved without creating an opportunity for infectious organisms to gain access into the eye.

Most glaucoma surgery depends on forming these drainage channels within the existing tissues by creating fistulae through the sclera (the tough outer coat of the eye) which enables the aqueous to drain into a space protected by the conjunctiva and another

layer referred to as Tenon's capsule. This procedure is usually performed fairly close to the junction of the cornea and the sclera, an area called the limbus, with an operation commonly referred to as a trabeculectomy. The result of this operation is a sort of little blister which appears on the outside of the eye and is formed by the aqueous discharging into the area. This blister is known as a draining bleb.

Even though the surgery that produced this drainage bleb may well have been successful in the first instance, it is not unknown for these fistulae to become blocked over time and for the aqueous to cease draining out of the eye.

Furthermore there are a number of conditions such as congenital glaucoma or neovascular glaucoma which do not easily lend themselves to this type of surgery either because, in the case of congenital glaucoma the patient is so young that the tissues are still forming and may very well change as the child ages or,

in the case of adult neovascular glaucoma, the factors that caused the new vessels to form in the first place may cause subsequent vascular complications around the draining bleb.

Glaucoma Implants

A number of these problems can be solved by the use of what is referred to as an aqueous shunt device, or glaucoma implant. The first of these glaucoma implants was developed by Anthony Molteno in about 1969. He found that by inserting a small piece of plastic tube into the anterior chamber between the cornea and the iris, and allowing the aqueous to drain through this tube into a space under Tenon's capsule, he was able to create a fistula which would enable aqueous to drain into this space very efficiently. Unfortunately it wasn't long before the draining end of the tube became occluded with tissue, blood vessels and all manner of debris which prevented it from functioning.

He then devised a technique whereby a silicone tube was connected to what is referred to as a plate. The plate is approximately 8-13mm in diameter and it acts rather like the delta of a river; it spreads the outflow of the drain over a large area. It has the added advantage of increasing the surface area of the bleb. The bleb under the pressure of aqueous will inflate in a manner not dissimilar to the blister that was referred to earlier as the result of a trabeculectomy. By virtue of its elasticity, this bleb also acts as a pressure regulator.

An analogy which Professor Molteno often uses is that "it is a bit like blowing up a balloon". Balloons are initially quite hard to blow up and then after they have begun to inflate it becomes easier. The tissue covering the bleb produces a similar effect.

These initial "drains" as they were known were extremely successful and really were the beginnings of the whole field of implant surgery for glaucoma. Prior to that a number of mechanical devices had been used but none of them exist today as their results were variable or not sustained over a long period.

Since producing the initial device Professor Molteno has further refined his technique and improved the implant. There are now a variety of options available: one of the most successful has been the double plate implant which in effect creates two draining blebs and enables greater flexibility in controlling the pressure. Another innovation has been to tie a ligature of dissolvable suture material around the silicone tube and when, usually about four or five weeks after the implant has been inserted, the suture material dissolves, aqueous drainage begins to occur. This allows time for the tissue over the bleb to heal before the outflow begins. It has the advantage of creating a cleaner wound, far fewer complications and consistent maintenance of the pressure is more likely to be assured.

Molteno implants are used extensively in glaucoma surgery throughout the world. As mentioned in the previous article there are a number of similar devices produced by other ophthalmologists but none appear to confer any real advantages over the original Molteno implant and Anthony Molteno has the satisfaction of knowing that his was the first.

"While all the art of imitation, is pilf'ring from the first creation."

Robert Lloyd

The Symptoms of Glaucoma in Babies and Young Children

Yes! Babies and children can have glaucoma. In fact an infant can be born with serious eye problems due to glaucoma. It is rare but it is also very important to recognise it immediately. Treatment can restore sight and prevent life long blindness.

Here are the features that should be looked for in every new born infant:

Large eyes: The outer coat (sclera) of a child's eye is much softer and more flexible than that of an adult. As a result, if the pressure rises in the eye, the eye expands rather like a balloon being blown up. This gives rise to the old-fashioned name for childhood glaucoma, buphthalmos, a name which likens an eye with this form of glaucoma to the eye of an ox. This enlarged eye size is one of the best indications of raised eye pressure in a child. Reducing the pressure does not usually bring the eye back to its normal size. As the eye is enlarged it will be myopic (shortsighted) and require spectacles to focus properly. Any infant with myopia must be checked for glaucoma.

Sensitivity to Light: Children with raised intraocular pressure often become very sensitive to light. There are several causes for the glare. The clear window of the eye (cornea) may be slightly waterlogged and cloudy, which can be uncomfortable. When the cornea is not absolutely clear, light bounces off the cornea irregularly and causes glare. Even after the pressure is lowered, some degree of sensitivity to light may persist in the long term.

Squeezing the eyes shut: An infant with glaucoma often wants to keep his or her eyes shut very tightly. This is called blepharospasm. It is not surprising given the pain, discomfort and glare that the infant is experiencing!

Cloudy Eyes: The cornea has a single layer of cells on the inside which pump water out of the cornea, keeping it clear. If the intraocular pressure rises sufficiently, fluid is pushed into the cornea, making it waterlogged and cloudy. Small cracks may occur on the inside of the cornea (Haabs Striae) and this may also cause partial clouding. The clouding clears when the pressure is reduced.

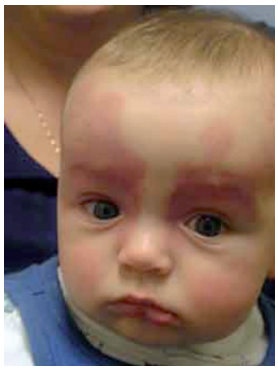
Watering Eyes: Watering is a natural response to any form of irritation of the eyes. However in infantile glaucoma the tears flow excessively. This should improve when the pressure in the eye is controlled.

Poor Vision and Jerky Eyes (Nystagmus): Occasionally, if raised pressure in the eye has caused clouding of the cornea or pressure on the optic nerve (the nerve that conveys sight to the brain), vision may be poorer than usual and there maybe also slightly jerky movements of the eye. After treatment, most of these symptoms improve.

Squint (strabismus): In some children the eye with poorer vision may be seen to turn inwards, towards the nose, or outwards.

Check It Out!
Children don't have to be able to talk to have an eye examination.

Sturge-Weber Syndrome



Sturge-Weber syndrome is a condition which some children are born with, it doesn't seem to be inherited, and its cause is unknown. It is characterised by a facial birthmark and neurological abnormalities. Other associated symptoms can include eye and internal organ irregularities. Each case of Sturge-Weber syndrome is unique and exhibits the characteristic findings to varying degrees.

Facial Birthmark

The most obvious sign of Sturge-Weber syndrome is a facial birthmark or 'Port Wine Stain', involving the upper eyelid and forehead. Much variation in the size and colour of the 'stain' has been reported – it may be limited to one side of the face or involve both sides. The birthmark is due to an overabundance of capillaries (small blood vessels) just beneath the surface of the involved skin. In persons with dark skin, the stain may be difficult to recognize. In rare instances, there is an absence of a birthmark.

About two-thirds of children born with port-wine stains on the forehead and upper eyelid will develop glaucoma, which may occur at any time before young adulthood.

Though this condition is somewhat common, it is not well known that there is a relationship between what appears to be a skin problem and the eye disease. Unfortunately, the delay in checking children with Sturge-Weber syndrome for glaucoma leads to what could be preventable blindness.With early diagnosis and proper treatment, glaucoma in these children can be controlled and eyesight saved.

Bungee Cords Can Cause Eye Damage

The elastic devices used for securing equipment can cause serious damage to the eye that may result in future vision problems if they are not used carefully.

A paper, published in a recent American Journal of Ophthalmology, looked at four cases of eye injury from bungee cord use. Bungee cords are made of an elastic material with metal hooks at each end that can be locked or fastened to another structure. Patients were either securing equipment with a cord or removing a cord when the cord snapped and hit one of their eyes.

While injuries included internal bleeding in the eye, dislocated lenses, retinal detachments and immediate but temporary loss of sight, each patient had damage near the part of the eye that drains fluid, predisposing them to glaucoma.

The eye contains and makes aqueous fluid, which it continuously drains through a "sewer system". This fluid does not drain as well when there is damage to the tissue around the drainage canal, and this can cause angle-recession glaucoma.

While each patient gained perfect or near-perfect vision in the injured eye, people should be encouraged to use care with bungee cords. We use them frequently and they are great tools for securing things. But most people don't realise how dangerous they can also be.

adidas Auckland Marathon

To be up and ready to go at 5.00 am is not easy! But the 70 people who ran or walked for Glaucoma NZ in the recent adidas Auckland Marathon, Half Marathon, or 10 K event all managed to have at least one eye open as they crossed the start line at 6.30 or 7.00 am, depending on which event they had entered in. The pain of the early start was soon forgotten by some as the pain of unused muscles took over! Others powered their way to the finish, pleased that the time spent in pre-race training was now paying off.

The weather was perfect – fine and warm but not too much sunshine and just a slight breeze to cool the sweating brows. The purple t-shirts with the blue Glaucoma NZ logo were easily spotted, even though there were more than 10,000 participants pounding the pavements in the various events.

All crossed the finish line at Victoria Park and friends and supporters were welcomed at the Glaucoma NZ tent to share the elation of personal triumphs and sympathise with the tales of blisters and aching muscles. Sausages and Schampers provided a temporary fix before people headed home for saunas and siestas.

The sponsorship money is still coming in but we are hoping to raise over $10,000.00 – a record amount and a personal best for Glaucoma NZ! We thank all who participated and made it such a fun day. We also thank our many sponsors – South Auckland Charitable Trust, The Mad Butcher, Euro Optics, Kawau Kats Harbour Cruises, Auckland University Recreation Centre, Medical Assurance, Pfizer, Alcon, Allergan, Subway Grafton, Grafton Pharmacy, Spectrum Photos and Kroma Colour Prints.

Contact Us with Your Questions & Comments

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YES, I would like to help GLAUCOMA NZ TO SAVE SIGHT

☐ I would like to become a member of Glaucoma NZ at no cost

☐ I would like to donate $_____

I enclose my cheque for $_____ made payable to Glaucoma NZ,
or please debit my

○ Visa ○ Amex ○ Mastercard Name on Card_____

Card No ____/____/____/____ Expiry ___/___ Signature _____

Address_____

_____Phone No _____

Donations of $5.00 or more are tax deductible

☐ I am interested in becoming a volunteer for Glaucoma NZ

☐ I would like information on leaving a bequest for Glaucoma NZ

Meetings, Meetings, Meetings!

Venues, Dates and Times of Forthcoming Public Meetings

November 26th Whakatane
10.00 am Disability Resource Centre, 141 – 143 King Street

December 3rd Palmerston North
10.00 am The Education Centre, Palmerston Nth Public Hospital, Ruahine Street

Calling our Younger Members

A while ago in Christchurch one of our younger members asked if there were any other teenagers in New Zealand with glaucoma. She said she felt quite isolated and that most of the information and education material available was for older people. At our recent Wellington Public Meeting a young person (with glaucoma) kindly helped me set up the chairs at the meeting venue. So there are at least two of you who are members of Glaucoma NZ! If you are a 'younger' person with glaucoma and you would like to make contact with other young New Zealanders who also have glaucoma, send an email to admin@glaucoma.org.nz