The Lachlan McNeill Scholarship 2007

Cataract Surgery in Mauritius – Learning Extracapsular Surgery & Teaching Phacoemulsification Techniques

Project Report

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1. Introduction and update

Several major changes have influenced this project since it was first envisaged in November 2006. At that time, extracapsular cataract extraction (ECCE) was the exclusive technique employed by all 8 surgeons at the Moka Eye Hospital (MEH). By January 2008, this picture had already evolved considerably with two surgeons having converted over 95% of their surgery to phacoemulsification and two others showing great interest in doing the same. The needs of our Mauritian counterparts in 2008 were clearly different to those in 2006. There was much more to achieve in helping to re-organise the cataract care pathway rather than just teaching the technique of phacoemulsification.

The evolving situation in Mauritius was paralleled by a significant change in my professional circumstances. Having spent three rewarding years as a trainee in Glasgow, I joined the Yorkshire Deanery as a Specialty Registrar in Ophthalmology in August 2007. This geographical move had a major bearing on our project. My mentor, Mr Tim Lavy, Consultant Ophthalmologist in Glasgow, introduced me to Mr Andrew Cassels-Brown, his counterpart in Leeds. Mr Cassels-Brown's expertise in community eye health gave several additional dimensions to the initial aims of the project whilst also creating the opportunity for me to travel to Madagascar to experience the delivery of eye-care in a third world setting.

The Lachlan McNeill Scholarship therefore took me to Mauritius and Madagascar in the interval between the 13th January and the 2nd February 2008. Our achievements and my own experiences are outlined in the following sections.

2. Learning extracapsular cataract surgery in Mauritius

As expected, the MEH proved to be an ideal location for learning extracapsular surgery and broadening my repertoire of surgical skills. I was initiated to the operation on my very first day and began operating independently as from the second. I was able to record my surgery and review it with either Mr Cassels-Brown or one of the other senior surgeons at the MEH. Over the 3 week period, I was introduced to a variety of extracapsular approaches including the endocapsular variant. I performed a total of 12 ECCEs independently and also audited my refractive outcomes. The following table summarises my results:

Patient	Pre-op acuity	Complication	Post-op acuity	Astigmatism
71, M, RE	HM	Nil	CF	+5.00
65, M, RE	HM	Nil	6/9	+2.50
74, M, LE	HM	Nil	CF	+8.50
60, M, RE	CF	Nil	6/36	+1.75
68, M, LE	HM	Nil	6/24	+2.00

77, F, LE	CF	Nil	CF	+8.50
76, F, LE	CF	Nil	CF	+6.00
76, F, RE	CF	Nil	CF	+8.75
71, F, LE	PL	Nil	N/A	N/A
78, F, LE	CF	Nil	6/36	+7.75
73, F, RE	HM	Nil	6/24	+1.75
82, M, RE	CF	PC rupture	N/A	N/A

(M= Male, F=Female, RE= Right Eye, LE= Left Eye, PL= Perception of Light, HM= Hand Movements, CF= Counting Fingers)

Being so accustomed to the excellent and rapid recovery patients have from phacoemulsification surgery, reviewing my first few patients after a week was an interesting experience. Since all had been operated on when effectively blind from their cataracts, even the slightest improvement meant a lot. I was however rather disappointed by the amount of astigmatism induced by my surgery and endeavouring to minimise this became an important challenge. My learning curve over the 3 week period was very steep and I have achieved several important milestones:

- Learning a new surgical technique in an unfamiliar environment
- Appreciating the constraints imposed by limited resources
- Establishing links to facilitate future skills transfer or training visits
- Appreciating that patient expectations vary according to context

All of the above have contributed to my original aim of using this experience to become a more versatile clinician and surgeon.

3. The cataract pathway in Mauritius

Since 2006, the waiting-time for cataract surgery in Mauritius has attracted significant media coverage and has also been widely politicised. Whilst the current official waiting-time is 2 years, it is common for patients to be attending outpatient reviews at the MEH for several years before being waitlisted. The Mauritian government, under pressure, has invested heavily in phacoemulsification equipment and supplies with the primary aim of reducing the waiting list. Whilst there is clearly a trend towards conversion to phacoemulsification surgery, this has not so far influenced the efficiency of the cataract pathway in Mauritius.

With Mr Andrew Cassels-Brown's input, our initial plan of teaching phacoemulsification evolved into a multi-dimensional project to assess the changing needs of the cataract-care pathway. This was put forward to the Ministry of Health in Mauritius and Mr Cassels-Brown was invited to visit the MEH and assist in the creation of a new cataract pathway. Mr Cassels-Brown visited Mauritius between the 17th and the 24th January accompanied by Sister

Patricia Wallis, a senior nurse practitioner from the Eye Department at St James Hospital in Leeds. Apart from demonstrating phacoemulsification surgery, several key areas for improvement were identified within the existing cataract pathway through meetings and mini-workshops:

- Using cataract surgery as an opportunity to predictably alter refractive state given that state-of-the-art equipment in the form of an IOL Master has been purchased for the MEH recently
- Using an evidenced-based approach to the pre- and post-operative care of patients thereby eliminating wasteful practices such as the excessive use of drugs, unnecessary overnight stays and all too frequent outpatient reviews
- Delegating routine pre-operative and post-operative assessments to suitably trained nursing staff
- Encouraging the practice of audit amongst the surgeons by using freely available software from the International Centre for Eye Health

The above recommendations, and others, will be submitted to the Ministry of Health as part of an official report.

4. A Vision 2020 programme for Mauritius

The Government of Mauritius, following earlier recommendations, has endeavoured to launch a Vision 2020 programme to deal with preventable blindness in the island and will be holding a first workshop meeting in April 2008. Mr Cassels-Brown's expertise in Community Eye Health and his involvement in the Leeds Vision 2020 programme proved valuable in this context. The prospect of a link between Leeds and Mauritius has been raised. This has created the additional opportunity for me to attend the first Vision 2020 workshop in April 2008. I have already established links with key representatives of governmental and non-governmental organisations (NGOs) likely to be involved in the project.

5. Ophthalmology in Madagascar

Madagascar has a population of about 20 million and is situated about 650 miles west of Mauritius. Despite being very rich in natural resources, including oil and gold, 70% of its people survive on less than £1 per day. Not surprisingly, ophthalmic services are at best rudimentary and in many places, non-existent. My trip to the island, as a visiting ophthalmologist, was facilitated by a formal link between Leeds Teaching Hospitals and the Malagasy Government. I was there for 4 days from the 24th January and spent all my time at the Malagasy Lutheran Church Hospital in Antsirabe, 150 km south of the capital Antananarivo. The eye department caters to a population of about 500 000. The estimated prevalence of blindness is 1%, of which 50% is due to cataract.

My original objective in Madagascar was to be introduced to manual small incision cataract surgery. I came back with much more. Whilst there, it very quickly became obvious that the challenges and needs of a third world nation are very different to those of a developing one. I had just been in Mauritius where our efforts were directed towards bringing the standards of service delivery closer to the ones we are used to at home. In Madagascar, the struggle was to provide a

very basic service aimed at dealing with the main preventable causes of blindness. I was struck by the makeshift arrangements to cope with the scarcity of resources but also encouraged by the fact that our efforts to help could make a tangible difference to the care provided.

My experience in Madagascar has fuelled my interest in international ophthalmology and ophthalmic public health issues. I aspire to a lifelong commitment to the development of eye care services in poorer nations. I will be travelling back there in a year's time.

6. Conclusion

Mauritius and Madagascar have contributed significantly to my professional and personal development. Our achievements have exceeded my initial expectations. Aside from broadening my surgical skills, I have gained first-hand insight into some of the challenges and obstacles encountered in implementing change. Our efforts to help, especially in Mauritius, have earnt goodwill and also created new opportunities which I intend to pursue.

I would have no hesitation in recommending such a venture to fellow trainees.

7. Acknowledgements

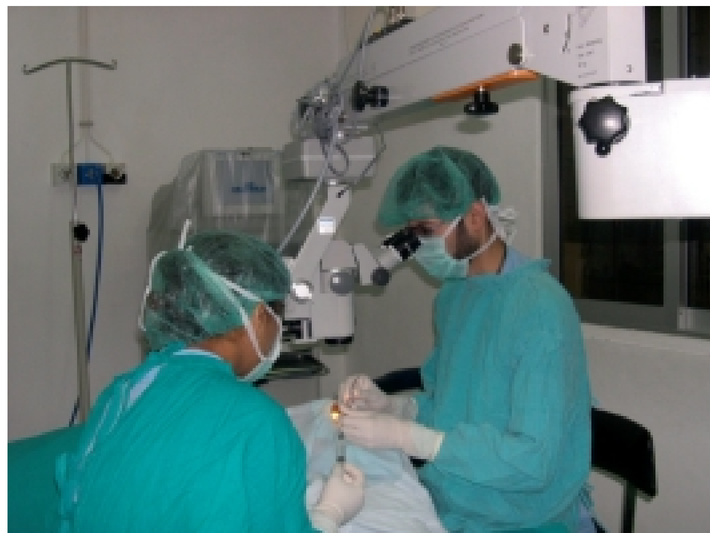
I am grateful to the Royal College of Physicians and Surgeons of Glasgow for the award of the Lachlan McNeill Scholarship which made this project possible. My special thanks to: Mr Tim Lavy, Consultant Ophthalmologist in Glasgow, for having encouraged me to pursue the idea and helped me with establishing the necessary contacts ; Mr Andrew Cassels-Brown, Consultant Ophthalmologist in Leeds, for his participation and support; Drs Farad Uteene, Mahen Bisnatsingh & Hassenjee Dawreeawoo, Ophthalmology Specialists at the MEH, for keeping me abreast with the local developments; The Ministry of Health, Mauritius for approving our plan and logistic support; and finally, Dr Henry Nkumbe, Ophthalmologist at Antsirabe, for making a very short trip extremely enriching.

7. Mauritius & Madagascar in pictures

Pics 1 & 2. The grounds of the MEH

Pic 3. The outpatient reception

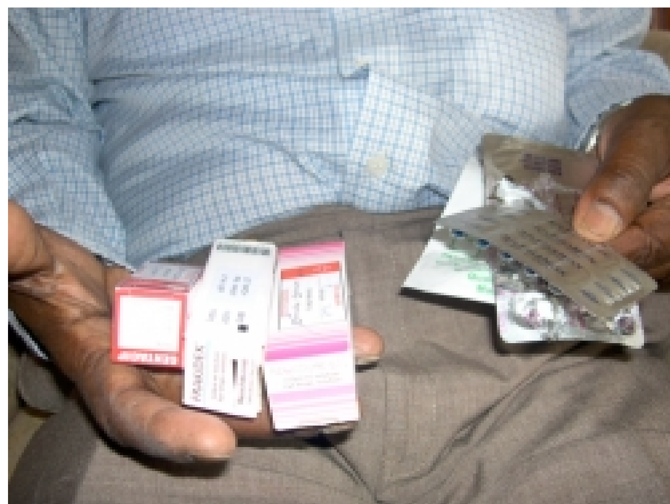
Pic 4. A new role for theatre staff – biometry



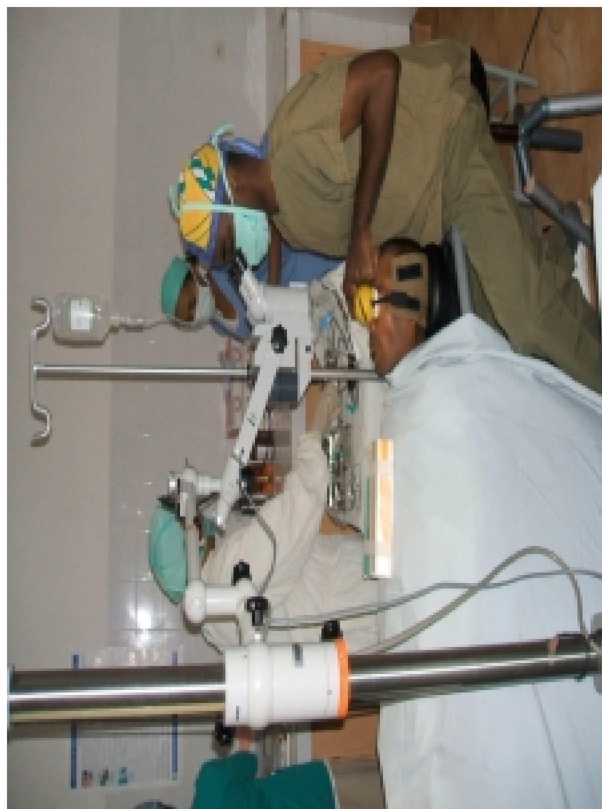
Pic 5. Doing an ECCE

Pic 6 – Back from cataract surgery to the ward

Pic 7. First dressing after ECCE – This patient could see 6/9 a week later


Pic 8. A typical post-op regime of drops and tablets

Pic 9. The Lutheran Church Hospital in Antsirabe, Madagascar


Pic 10. Henry Nkumbe preparing for manual small incision cataract surgery