

reaches of Madagascar in order to catch a glimpse of the solar eclipse.

Our study audited the incidence of solar maculopathy post-eclipse presenting to the eye clinic. Five months after the event there had been no reported sightings of eclipse related retinopathy. This was in stark contrast to a study in the UK<sup>2</sup> which reported 70 cases of temporary visual loss after the 1999 eclipse. They reported no cases of permanent visual disturbance 6

months later. Rai et al<sup>3</sup> in a study in Nepal audited the incidence of solar maculopathy over a 20 month period. They found that 40% of the 319 cases were eclipse related.

## Conclusion

The Malagasy eclipse experience highlights the fact that an underdeveloped country can provide effective public health education. Clearly the beliefs of the population played an important part in keeping a

large percentage of people indoors during the eclipse.

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## Report

# Comparison of Cataract Surgery in a Base Hospital and in Peripheral Eye Camps

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The Base Hospital approach (reach in) and Peripheral Eye Camp approach (reach out) are both community-orientated approaches to tackle the backlog of cataract blindness under the National Programme for the Control of Blindness. Both have proved effective and each has its merits and demerits. Both rely on community participation, intersectorial coordination and appropriate technology at an affordable cost.

We studied 3130 patients operated on for cataract by the Lions NAB Eye Hospital, Miraj (Base Hospital) between 1st January and 31st December 1996 and 1135 patients operated on at 58 Peripheral Eye Camps by the Sangli District, Mobile Ophthalmic Unit and the National Association for the Blind, in the same period. Follow-up was done one week, 3 weeks and 6 weeks after surgery.

The Base Hospital conducted diagnostic camps in the periphery and patients were moved to the Hospital, accounting for 80% of the patients, with the rest being 'walk-ins'. Patients were evaluated using the slit-lamp biomicroscope, keratometry and A-scan where necessary. They underwent planned extracapsular cataract extraction with a posterior chamber intraocular lens implant (58.2%) under a microscope with use of viscoelastics. They were re-transported after dressing the next day.

The Peripheral Eye Camps were conducted in Rural Hospitals or Primary

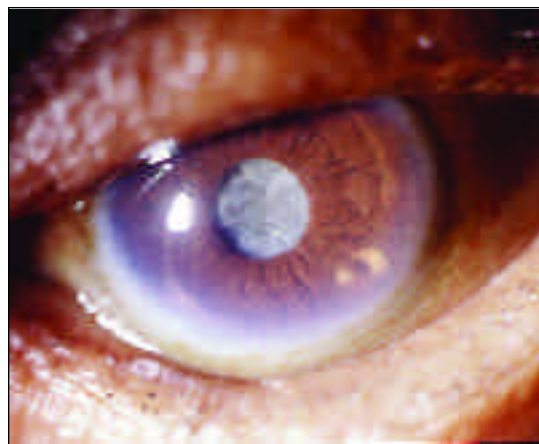
Health Centres in permanent operation theatres, using sterile procedures. Diagnostic camps were conducted at the same site and the patients operated on the next day with intracapsular cataract extraction under an incandescent lamp. Dressing was done on the first and third day by the operating surgeon, followed by discharge.

More women were operated on in Peripheral Eye Camps (59.1%) as compared to the Base Hospital (48%) as their carers were reluctant to transport them far. The very young and very aged were predominantly operated on in the Base Hospital because of the presumed quality of surgery and better management of complications.

Even in the periphery, 92% of patients or their carers were aware of IOL implantation surgery. Only 8% were unaware. Inability to pay was the chief reason (80%) for operating without lens implantation. Only 12% had fear or misconception about something put in their eyes. This means that a larger demand for surgery exists in the periphery for which we must prepare.

Final corrected visual acuity was much better in the Base Hospital (82.7% > 6/18) as compared to Peripheral Eye Camps (43.7% > 6/18). There is a significant difference between post-operative visual acuity in these groups. Microsurgery, viscoelastics and retinoscopic refraction gave a statistically significant qualitative improvement in vision. Base Hospital surgery resulted in better and earlier visual rehabilitation.

The Professor had significantly better results than all other categories. It should be noted that more experienced surgeons operated on more difficult, 'guarded prognosis' cases. (Professor: 95.2% > 6/18;



*Mature cataract*

*Photo: John DC Anderson*

Medical Officers/Registrars: 82.6% > 6/18; Senior Residents 86.5% > 6/18; Junior Residents : 76.3% > 6/18).

However, post-operative follow-up in the Base Hospital was very poor; only 52.7% patients turned up regularly on their own. For the rest, we had to do active follow-up in rural areas. Peripheral Eye Camps boasted 99.1% follow-up as they were conducted near to the patients' homes with the help of ophthalmic assistants who had close community contacts. The Base Hospital should have satellite outposts to ensure better patient follow-up and compliance. This will strengthen its network in the community.

Complications with both approaches were equally found, though the Base Hospital operated on all the difficult cases. Also, all Peripheral Eye Camps were conducted in permanent operation theatres. Vitreous loss was the chief cause of low post-operative vision (1.8% in the periphery and 3.3% at the Base Hospital). Posterior segment pathology was responsible for most others (3.7%).

**Table 1: Post-Operative Corrected Visual Acuties in Peripheral Eye Camps and Base Hospital. Aphakic Correction with + 10 D given to 99.1% Patients (1125 out of 1135) and Retinoscopic Refraction given to 63.9% (2000 out of 3130); Six Weeks after Surgery.**

Vision	Total	% At Eye Camps	Total	% At Base Hospital
6/6-6/9	58	5.2%	685	34.3%
6/12-6/18	434	38.6%	966	48.3%
6/24-6/36	575	51.1%	227	11.4%
6/60	44	3.9%	92	4.6%
<6/60	14	1.2%	30	1.5%

**Table 2: Experience of Surgeon and Post - operative Vision in Base Hospital**

Vision	Junior Residents	Senior Residents	Registrar or Medical Officer	Professor
	< 50 ops.	50 – 200 ops.	> 200 ops.	> 4000 ops.
6/6-6/9	33%	30.4%	33.9%	57.1%
6/12-6/18	43.3 %	56.1%	48.7%	38.1%
6/24-6/36	16%	8.5%	10.7%	
6/60	5.6%	3.1%	6.7%	
<6/60	2.6%	1.9%	1.8%	4.8%

**Table 3 : Cost of Surgery per Patient (All figures are in rupees)**

Expense	Peripheral Eye Camp	Base Hospital
Vehicle	23.0	17.25
Expense	47.0	76.49*
Consumables # for Surgery	75.0	79.91
Medicines for Patients	80.0	78.66
Salary & Wages of Surgical Team	152.5	142.76
Goggles	13.0	13.00
	<b>390.50</b>	<b>408.07</b>
Office Expense		29.91
Hospital		44.10
Maintenance		
Depreciation		15.02
<b>Total</b>	<b>390.50</b>	<b>497.10</b>
<b>IOL Expense</b>		<b>233.66*</b>

\* Includes food provided for patient over three days.

# Includes suture material, viscoelastic substance, etc.

◆ The cost of IOLs is now almost half the price of 5 years ago.

The surgery in Peripheral Eye Camps was marginally more economical as compared to the Base Hospital (recurring expenses per patient being Rs. 390.5 and Rs. 408.77 respectively). But considering the quality of surgery, early and better

visual rehabilitation, the Base Hospital approach has much to recommend it.

Satellite Centres could be set up to improve follow-up. This shift to Base Hospital and Satellite Centres would ensure quality eye care to all patients, while still keeping community orientation.

There is no significant difference comparing Junior Residents (<50 ops.), Senior Residents (50–200 ops.) and Registrars/ Medical Officers (200–4000 ops.). There is, however, a significant difference between the results of the Professor (> 4000 ops.) and all other categories.

## Sources

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2. Personal communication with the District Ophthalmic Surgeon (Class - 1), Sangli District, for Peripheral Eye Camps.

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## Letter

### Cataract Surgery

#### Dear Editor

I read J Fumpa's letter in the Journal (*J Comm Eye Health*; 2001; **14**: 15). His concern is fully understood by those who have lived in such circumstances in the past.

Between ICCE and ECCE (phaco is also ECCE), there exists another system which is suitable to any part of the world and any economic situation. I developed the mini-nuc technique. With a very small number

of instruments one can achieve safe and very high standard cataract surgery, with or without an IOL. If a YAG instrument is not available, after implanting the IOL one can perform posterior capsulotomy under the IOL, thus avoiding the necessity of future YAG treatment. As it would be performed under the IOL, the IOL would prevent vitreous prolapse to the anterior chamber.

There are the means to perform perfect cataract surgery around the globe – safely, no viscoelastic material, no sutures, very cost effective. The only thing to be done is to learn how to do it!

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