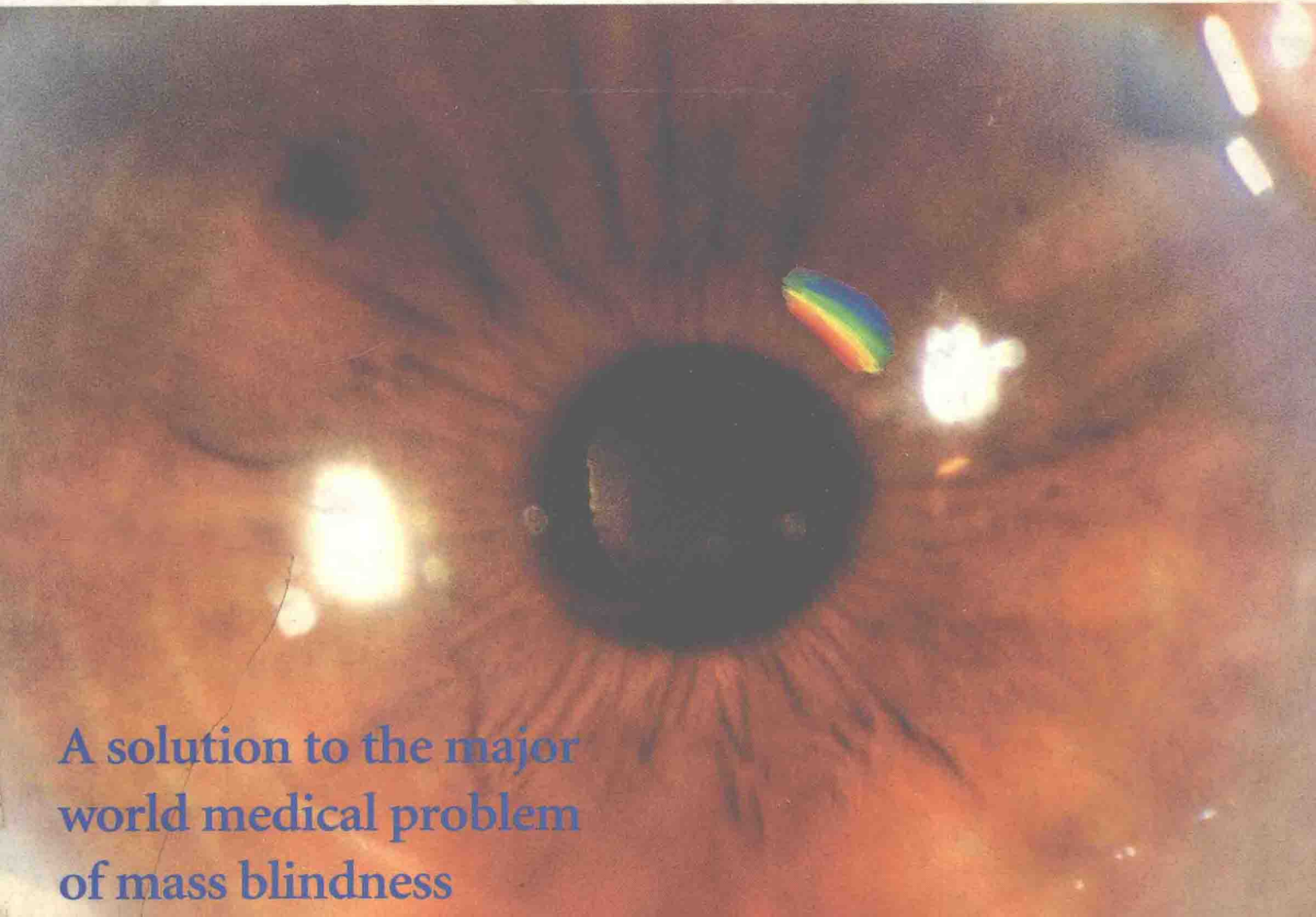


Arthur S M Lim

Vision for the World



A solution to the major
world medical problem
of mass blindness

Vision for the World

Eye surgeons' solution to mass blindness
– a major world medical problem.

Arthur S M Lim



Singapore National Eye Centre



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Professor Antonio S.M. Ugalde, who has been teaching at the University of Puerto Rico since 1968, is shown in the portrait. He is a man with dark hair, wearing a suit and tie, smiling slightly.

Dedication

“My vision, her effort.”

I dedicate this book to Professor Yuan Jia-Qin who is my foremost partner in my battle of ten years against cataract blindness. Professor Yuan Jia-Qin, a dynamic, dedicated, skilful, determined, highly intelligent, leader of ophthalmology who established a centre which will be a model to solve one of the world's most important medical problems.

To all the eye surgeons of the world, I also dedicate my book and hope that it will be of some value in their own missions to make the world a better place.

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This book is also dedicated to the hundreds of colleagues, co-workers and leaders of organisations dedicated to the prevention of blindness. Supporters from the International Council of Ophthalmology (ICO), Asia-Pacific Academy of Ophthalmology (APAO), International Intraocular Implant Club (IIIC), Asia-Pacific Intraocular Implant Association (APIIA).

Foreword

When, as a result of the lack of international human organisation, human misery and socio-economic agony of millions of blind cataract victims continue to increase in the poor areas of our world, at a time when spectacular medical advance can restore normal vision at low cost to all the blind cataract patients, I will continue to press for action, for change.

Professor Arthur Lim

Acknowledgment

I am particularly indebted to my wife, Mrs Arthur Lim, for her scrupulous editing and for joining me in my vision against cataract blindness. I would also like to thank Dr Kwa Soon Bee, the Permanent Secretary (Health) and Director of Medical Services, Ministry of Health, for his unwavering support of my endeavours.

Dr Ang Beng Chong, my able and dedicated partner and his wife, Dr Su Hong Hai, and the nursing staff led by Sister Peck Chye Fong for supporting my efforts so strongly, at a time when the implant was uncertain. The late Mr Chan Seng Poh and his daughter, Ms Chan Poh Choo for their generous donations, and Ms Charity Wai and Ms Chiam Soo Lee for their continued efforts in the communication and administration of the activities.

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Afterword

1. Introduction

Once in a century, a unique historical opportunity arises, the opportunity for eye surgeons of the world to contribute their skills to mankind. Like many medical advances, resistance to change can be intense and frightening: we can recall in history, the numerous opposition to change and progress in medicine.

Eye surgeons are now essential in the control of mass blindness.

Mass blindness has shifted from infection (onchocerciasis, trachoma, corneal ulcers) to cataract. Similarly, blindness from malnutrition - keratomalacia is disappearing in the more affluent developing nations.

As life span increases, in some reports, cataract now accounts for up to 80% of mass blindness today. In the past, Intracapsular Cataract Extraction (ICCE) was used in eye camps. Unfortunately, this method only restores limited vision. For a number of reasons, ICCE is still usually the main procedure, although it is now clear that Extracapsular Cataract Extraction (ECCE) and Posterior Chamber Implant (PCI) can restore normal vision to thousands of victims of cataracts in communities where conditions are appropriate.

There are of course problems with ECCE and PCI in many developing nations, but unless the leaders are determined to introduce ECCE and PCI these problems will remain. A successful approach is to establish training centres.

Ten years ago in 1986, such a centre was proposed. In 1989, the International Intraocular Implant Training Centre (IIITC) in People's Republic of China was established in Tianjin. This centre has already successfully restored normal vision to 18,000 cataract patients, 6,000 in Tianjin and 12,000 in the



ABOVE Prime Minister of the People's Republic of China, Mr Li Peng, welcomes Professor Arthur Lim and his wife, Poh Geok at the Great Hall of China in Beijing, in recognition of their contribution.

affiliated hospitals. An ambitious plan was launched to perform 100,000 implants successfully with other centres in the country by the year 2000.

The success of the Tianjin Centre should be carefully studied as this approach can be a model for the developing nations to control mass blindness from cataract in the world.

Resistance to change remains. It is sad that some leaders directing the battle against mass cataract blindness in Asia continue to choose the comfort of cosy stagnation and avoid the exciting challenge of introducing low-cost ECCE and PCI in countries where it is appropriate.

The answer lies in human organisation. Our success will depend on international cooperation. I believe that this will be a unique opportunity for eye surgeons to utilise their skills for the benefit of mankind. It is a demanding challenge to eye surgeons around the world.

Let us, the eye surgeons of the world unite to achieve a global move to contain world blindness from cataract.

2. Impact Of Technology On Mass Blindness In Asia

Mass blindness, a manifestation of poor organisation and poverty, will double by the year 2000. Blindness from cataract will increase with increased life expectancy. The problem will be insoluble in many poorer developing countries where mass blindness is expected to become worse as we enter the 21st century. The main reason is poor organisation - the failure to mobilise knowledge and technology into effective action.

However, mass blindness in the wealthier developing nations will gradually disappear. With affluence, there will be public demand for quality eye care and implant surgery will develop initially in the cities and will slowly spread to the rural communities.

Introduction

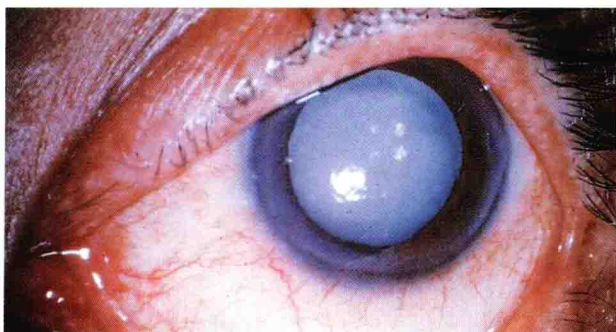
As if to belittle the technological might of the 20th century, the insidious power of disease remains unending, leaving behind millions blind from scarred corneas, opaque lenses and fibrosed retinas.

It is estimated that less than 5% of Asia's population have access to modern eye care such as microsurgery, laser therapy, vitrectomy, ultrasonography and fundal fluorescein angiography. Furthermore, in the less developed nations, the problem is even more basic. The major preventable or curable blindness in these countries include cataract, blinding malnutrition and blinding infection. The problem is expected to escalate as the increased life expectancy will lead to an increase in the number of patients suffering from cataract.

What has gone wrong? Why have we failed to prevent blindness from

The insidious power of disease remains unending, leaving behind millions blind from scarred corneas, opaque lenses and fibrosed retinas.

Why are there millions blind from cataract when the condition can be simply cured by removing the opaque lens?



ABOVE Cataract – the most important cause of mass blindness affecting over 20 million victims in Asia.

trachoma when we have known the cure for decades? Why do a quarter million children become blind from Vitamin A deficiency each year when we know that it takes just US\$0.09 cents per child per annum to prevent this? Why are there millions blind from cataract when the condition can be simply cured by removing the opaque lens?

The reasons for the failure of Asia's eye care delivery system are complex. They are dependent on the political, socio-economic and cultural factors. Let us begin by studying the common blinding conditions in Asia.

Blinding malnutrition

Blinding malnutrition from keratomalacia is a result of poverty. It is prevented by supplying the child with sufficient vitamin A. Despite the optimistic projection of the world's economy for the next two decades, a portion of the Third World, known as the Fourth World, will have no economic progress. In these countries

blinding malnutrition will continue to blind a quarter million children each year.

Glaucoma

Despite trabeculectomy and the introduction of new medication – the incidence of blindness from glaucoma is not expected to be reduced.

Dr Peter Watson made an important, perhaps controversial statement, that trabeculectomy should be performed earlier. There is merit in Watson's suggestion as noncompliance to medical therapy is an international problem. Intraoperative antimetabolites during trabeculectomy may be important.

Prophylactic peripheral iridectomy in the fellow eye following acute primary angle-closure glaucoma is important, safe and simple. It prevents an acute attack, and prevents blindness. It is important in many Asian countries where angle-closure glaucoma is more common than open-angle glaucoma.

Blinding ocular infections

A minor corneal abrasion often develops into a blinding ocular infection. This is prevented by the early use of local antibiotics. Once the infection is established, treatment is difficult and often futile.

Ocular trauma

Traumatic blindness is on the increase due to the increase in industrial and traffic accidents. Modern microsurgery has revolutionized the management and many eyes can now be saved. Many industrial ocular injuries are preventable. Seat belts diminish injuries and better vehicle parts give added protection.

Diabetic retinopathy

Human inventiveness has prolonged the lives of diabetics. But blindness strikes them by the thousands each year. Diabetic retinopathy is fast becoming a major cause of blindness in Asia. If blindness from diabetic retinopathy is to be prevented, early diagnosis and early laser treatment is imperative.

Technology and mass blindness

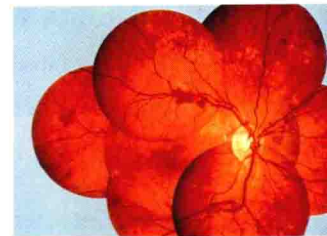
World renowned futurologist, the late Herman Kahn, stated: “200 years ago almost everywhere human beings were comparatively few, poor and at the mercy of the forces of nature, and 200 years from now, we expect almost everywhere they will be numerous, rich and in control of the forces of nature”.

Herman Kahn’s prediction is of great relevance to medicine and ophthalmology. It is a reflection of the constant battle between technological advances and disease processes.

Logically, mass blindness from blinding infection should have been eradicated by the antibiotics available today and malnutrition should not be a problem when the concern of millions in the wealthier communities is the danger of overeating.

The world is unfortunately more complicated. The organisation of nations has not successfully enabled the benefits of modern technology to be shared throughout the world. Thus, Asia, despite centuries of civilisation, continues to be plagued by mass blindness. Asia with half the world’s population carries the burden of half the world’s blindness.

The impact of technology on mass blindness has failed because of lack of human organisation. It can be argued that mass blindness like other preventable diseases is a problem of politics and socio-economic well-being. If civil war or political corruption develops in a nation leading to severe poverty, then mass blindness increases as has happened in Cambodia and rural Philippines. On the other hand, economic progress brings with it a gradual decline in mass blindness



ABOVE Diabetic retinopathy is becoming a common cause of blindness.

The world is unfortunately more complicated. The organisation of nations has not successfully enabled the benefits of modern technology to be shared throughout the world.

The impact of technology on mass blindness has failed because of lack of human organisation.

Cataract is a massive problem in Asia. It accounts for more than 50% of preventable or curable blindness in the developing countries.

Perhaps introduction of eye centres to provide high volume, efficient, static facilities should help to control the problem.

Efforts hardly coped with the number of new victims from cataract. The backlog of millions will remain and will increase.

from infection and malnutrition as has happened in Singapore, Hong Kong, Taiwan and South Korea.

Cataract Problem

Cataract is a massive problem in Asia. It accounts for more than 50% of preventable or curable blindness in the developing countries. There are just not enough surgeons to remove the cataracts. The backlog of unoperated patients is estimated to be well over 10 million and this has caused major social and economic problems.

In India alone, the estimate is that there are 6 million persons blind from cataract and this accounts for 55% of her blind population. A recent observation showed that the per capita number of ophthalmic surgeons of India is not very different from that of England. The difference is that the surgeons of India live mainly in cities where the vast majority of the rural population has no or little access. Reorganisation of the system and perhaps introduction of eye centres to provide high volume, efficient, static facilities should help to control the problem.

Unfortunately, in some countries, there are just not enough ophthalmologists. Plans should be made to resolve this. This can be achieved by training non-ophthalmologists to do cataract operations as has been done in Bangladesh. This is controversial. The other alternative is to utilise ophthalmologists from countries where there is an excess. Superficially it sounds easy. Japan has more ophthalmologists than it requires. It seems easy to have the surgeons flown across to the under-served communities. Unfortunately, in practice it is more complex.

The efforts of the World Health Organization (WHO) and those of the non-governmental organisations (known as the NGOs) have helped but the problems remain. The increased efforts hardly coped with the number of new victims from cataract. The backlog of millions will remain and will increase. And we are talking of a method of cataract surgery which is several decades old.



RIGHT Cataract eye camp in one of the poor neglected areas in Bangladesh.

INSET Intracapsular cataract extraction is now becoming obsolete.



Complications of cataract surgery in eye camps

Most cataract surgery done in eye camps is done with low cost, simple techniques with no microscopes and sometimes with very poor facilities. This has led to severe criticism as reports have indicated that the complication rate is well over 10% and unacceptable.

Dr Khalid J Awan stated that: “Professor S Memon conducted a careful study of cataract surgery in the eye camps, and reported that only about 50% of the patients receiving surgical care at these camps derived any benefit out of it.”

Simon Holland reported that an estimate of “17% of those operated on for cataract were irreversibly blinded by complications of the procedure” in Nepal. And in Saudi Arabia, the observation was that there was a complication rate of cataract surgery of 19%. Urgent steps are required to ensure quality care.