

**Keynote Address:
6th Malaysia-Singapore Ophthalmic Congress**

Ophthalmology in Asia in the Year 2000*

*Arthur Lim Siew Ming, FRCS, FRCSE, FRACS, FRACO
Medical Director, Singapore National Eye Centre*

The 20th century has been a period of rapid changes in Asia. These changes have had a significant impact on ophthalmology as they have on other developments.

Economists now predict that there is every indication that economic growth will shift from Atlantic to the Asia-Pacific region.

Most of the Asia had for centuries remained poor. Many of the countries were at one time under colonial rule, with their resources exploited by their western overlords. This was accepted as an inevitable part of colonisation, and a general sense of resignation prevailed.

However, the deeply entrenched way of life was suddenly shattered by the eruption of World War II. The unbelievable horrors and sufferings undergone by the people set fire to once suppressed spirits, and rekindled the will to achieve and carve out a place under the sun they could truly call their own.

The past four decades saw a transition both significant and intense in the region. Japan, whose economy was completely destroyed by the end of World War II, resurfaced like the proverbial phoenix from its baptism in fire, stronger and better. It is now an economic superpower to be reckoned with; its resources have overshadowed those of Europe and challenged those of the United States.

Just as significant is the emergence of four nations called the Newly Industrialised Economies (NIEs)- South Korea, Taiwan, Hong Kong and Singapore. They have been constantly achieving an impressive economic growth with a high potential for generating a GNP exceeding that of most of Europe. And in Southeast Asia, an effective economic entity known as ASEAN (Association of Southeast Asia Nations) has been successfully established. Singapore, one of the members, is already in NIEs, while Malaysia and Thailand are earmarked as the two next in line.

IMPACT OF GROWING AFFLUENCE AND AGEING POPULATIONS

Growing affluence, as well as improved nutrition and public healthcare, have prolonged life. One important consequence of this is that an increasingly ageing population has become a major problem in Japan and is fast becoming one in the NIEs. Ageing populations and growing affluence have influenced the pattern of illness. Eye diseases are no exception-major blinding condition from ocular infections (trachoma) and malnutrition (Keratomalacia) will decrease, while age-related blinding conditions such as cataract, glaucoma and diabetic retinopathy will increase. Industrialisation and the increasing use of motor vehicles will increase ocular trauma.

CATARACT

Cataract will surface as a major problem of growing concern. Cataract technology has changed rapidly from the 1960s- beginning with the operating microscope, multiple micro suturing, early mobilisation and more recently, extra capsular cataract extraction with intraocular lens implantation.

This poses a serious problem and has prompted a realistic projection that mass blindness from cataract will double by the year 2000. Ironically, the simple explanation lies in the advances of modern science which enable the population of Asia to live longer.

The United Nations Population Division has projected that the population aged 55 and above in the else developed regions in the world will quadruple between the years 1980 and 2025 (Table 1). This suggests that the age-related cataract prevalence will also increase by a factor of about 4, and the prevalence of blindness from cataract will climb to 40 million about 40 years from now.

THE IMPLANT CONTROVERSY

In the 1970s, surgeons throughout Asia looked at intraocular lens implantation with curiosity and sometimes scepticism. But, it soon becomes obvious that implantation, if adequately performed, gave excellent results. Thus, cataract surgery, previously a routine colourless procedure, was suddenly transformed into an operation of immense interest.

Many ophthalmologists have stated that implantation surgery is irrelevant in the developing countries. This view is wrong. The wealthier communities within the poorer countries will enjoy the benefits of technology, as they enjoy the benefits of better housing, communications, education and nutrition. It is clear that patients, who can afford to pay, will demand the best.

However, the major cost problems of lens implantation in developing countries which have to be overcome are:

- the cost of trained manpower
- the cost of implants
- the cost of sterile-buffered solution
- the cost of operating microscopes
- the cost of viscoelastic material
- the cost of postoperative follow-ups

Another unusual situation which is also schizophrenic had developed. In some countries like India, although burdened with millions of blind cataract patients in the neglected rural communities where even the primitive technology of cataract camps is often not even available, the ophthalmologists in the cities are rapidly moving towards sophisticated microsurgery and lens implantation.

The prevailing feeling is that implantation is at present appropriate only in the urban areas. In the neglected rural communities of most developing countries, its use is currently inappropriate in most developing countries. But, with economic progress, implants are expected to be inserted in selected communities in the next decade. This issue will remain controversial for some time yet.

MANAGEMENT OF OTHER MAJOR BLINDING CONDITIONS

The management of blinding conditions will change because of patient demands and the technology available.

1. Management of Glaucoma

There will be a dramatic change in the management of angle closure glaucoma. Laser peripheral iridotomy will be commonly used, especially for prophylaxis in the fellow eye.

Glaucoma combined with cataract will find its answer in the triple procedure of trabeculectomy, extra-capsular cataract extraction and posterior chamber lens implantation.

The impact on open-angle glaucoma is less dramatic when screening for glaucoma, automated perimetry and new medical therapy have not proved to be as effective as we had hoped for. The choice will continue to be medical therapy, microsurgical trabeculectomy or laser trabeculoplasty, or a combination of both. As trabeculectomy gives good results, it will be done more often. Furthermore, it overcomes the problems of cost and non-compliance.

2. Management of Diabetic Retinopathy

With affluence, overeating will cause diabetics to surface in many countries, and diabetic retinopathy will be more common. Blindness from diabetics retinopathy will increase until the patients get the message their eyes must be regularly reviewed. Blindness can be prevented with photocoagulation. Unfortunately, patients continue to seek treatment too late. This failure of eye-care delivery must be quickly overcome by starting regular screening programmes for diabetics.

3. Management of Blinding Ocular Infection

Affluence will reduce blindness from corneal ulcer and trachoma. In neglected agricultural communities, minor corneal abrasion is the main cause of corneal ulcer. Early treatment with antibiotics can prevent blindness. Unfortunately, this will come only with improved primary eye-care delivery. Treatment is far more difficult once the infection is established. In the coming decade, we can look forward to the setting up of simple laboratories to provide more effective treatment of corneal ulcers. This will save many eyes. Pseudomonas corneal ulcers from soft contact lenses will be prevented by encouraging the use of hard contact lenses and the control of practitioners fitting soft lenses.

4. Management of Ocular Trauma

Ocular trauma will rise as a result of industrial and traffic accidents. Microsurgery with vitrectomy will revolutionise management and many eyes will be saved.

5. Management of Keratimalacia

Blinding malnutrition (keratimalacia) from vitamin A deficiency is a disease of poverty. With affluence, it will be controlled without specific intervention as has happened in many countries. Singapore is an example.

PATTERN OF PRACTICE

The pattern of practice will change.

I, personally, expect a spectacular development in ophthalmology. In the wealthier countries, the best doctors will be drawn into ophthalmology because of the exciting new technology and the increasing demand. This will lead to a higher standard of eye-care, and with it, a fall in the incidence of blindness.

Because of the rapidity of changes in ophthalmology, it is more likely that private enterprises will have a head start in development. It is a well-known fact that governments and large organisations move too slowly.

As demand grows, cost control becomes essential. The answer will be centred, apart from cost of trained manpower, on the production of cheaper materials. Is phacoemulsification necessary for cataract extraction? Is there a substitute for Healon? Can the cost of implants be lowered? Should surgeons spend hours trying to restore limited vision in eyes with badly damaged retinas? Is it cost effective?

Then there is the question of quality assurance. We want to ensure the quality of surgery. Should not a one-eyed patient be operated on only by the best surgeon? How can surgical skills be measured? How do we ensure the best nurses are available? What about equipment and the price? How do we ensure quality? Can we provide eye-care which is not only better, but also cheaper? How can this be done?

THE YEAR 2000

What will be the scenario of ophthalmology in the Asia-Pacific region in the year 2000? The practice of ophthalmology will be transformed with dramatic speed. By the year 2000, I believe the following changes will take place:

- Ophthalmology will emerge as one of the most important surgical disciplines. This will be brought about by escalating public demand for the best treatment as sight becomes more important.
- There will be a three-fold increase in the number of ophthalmologists in response to increasing public demand.
- Sub-specialisation will be firmly established. We will have retinal surgeons, paediatric ophthalmologists, oculoplastic surgeons and those specialising in glaucoma and trauma, etc.
- Major eye centres will develop in Kuala Lumpur, Singapore, and probably Hong Kong, Jakarta, Bangkok and Guangzhou, working in close co-operation with one another, all aiming for international excellence.
- The private sector will play an increasingly important role in major ophthalmic development.

I believe that for rapid development, private enterprise is more effective as it offer greater flexibility than bureaucracy. Even in the USSR, the famous Fyodorov Institute is one of the private entrepreneurial results of a socialist republic. In Kuala Lumpur, we see the establishment of a major private hospital, the Tun Hussein Onn Eye Hospital. And in Singapore, the Singapore National Eye Centre represents another major private entrepreneurial effort.

As we march towards the end of the 20th century we must remember that Asia is changing very rapidly. More so than ever before, we as ophthalmologists must rise to new challenge- the growing ageing populations and rising levels of expectation.

There is a need for regional organisation and co-operation. Ophthalmologists must unite not only within a nation, but also on a regional basis. The progress of individual countries can only be sustained under the greater interest of the Asia-Pacific region as a whole.

The 21st century will be an exciting new era for ophthalmology- ophthalmological advances will gain new heights. This giant leap forward will be attended by a change in the flow of ophthalmologists wishing for advanced training and patients wishing for sophisticated tertiary eye-care- now mainly to the Atlantic- to the Asia-Pacific region.

I have shared some of my thoughts on ophthalmology in Asia and touched upon the possible scenarios as we enter the 21st century. We, as ophthalmologists, have been given the tremendous opportunity, as well as entrusted with a responsibility as never before in the history of medicine, to provide our people with high standards of eye-care. We must not fail, and I am confident that we will not fail.