Report of the Panel on Physical Medicine and Rehabilitation

Chairman: P. W. Brand (India and UK); *Secretary:* J. Arvelo (Venezuela);
Members: N. H. Antia (India); Margaret Brand (India and UK); J. E. Faggin (Brazil); M. Itoh (USA); M. Nakita (Japan); K. Nimbkar (India); D. E. Paterson (India and UK); E. W. Price (Nigeria and UK); D. C. Riordan (USA); Linneu Silveira (Brazil); D. Ward (India); E. Zamudio (Mexico).

By rehabilitation we mean the return of a patient to normal social life and economic independence with the fullest possible restoration of his own physical and mental well-being.

The greatest barrier to rehabilitation from leprosy has been the difficulty of cure of the disease. The second barrier is public ignorance and prejudice. Both of these are being considered by other panels, and we are glad to note improved methods of medical treatment, and the measures proposed for the education of the public.

In this panel we are concerned with the third great barrier to rehabilitation, the presence of physical deformity and disability. This is particularly serious because it continues after the disease is cured and makes a return to normal life difficult even when public prejudice is absent.

Since the last Congress in Tokyo, some important advances have been made both in the understanding of the pathology of deformity and in improved methods of correction by physical medicine and by surgical operation. An important event was the study group sponsored by the World Health Organisation ISRD & CWM which met in 1960 to evaluate progress in prevention and treatment of deformity in leprosy. The report of this study group emphasised that the great majority of the deformities and disabilities of leprosy are preventable and that those which cannot be prevented can be corrected by reconstructive surgery.

Unfortunately the surgical correction of deformities demands specially trained personnel and special equipment, neither of which is readily available in most of the countries where leprosy is common. It may be many years before enough surgeons and physiotherapists are available to help more than a fraction of the millions of deformed leprosy patients. This panel therefore wishes to emphasise that the prevention of deformity is much easier than its correction. With very little training and with inexpensive equipment it is possible for every doctor and para-medical worker to prevent the development of deformities in many of his patients.

It is disturbing to realise that at the present time progressive deformity is taking place, and eyesight is being lost, not only in untreated patients, but in patients who are receiving regular medical treatment. Most of this deformity and blindness could be prevented if the doctors and para-

medical personnel were given the training and allowed the time to advise and help those patients in whom they recognise the danger signs of early deformity.

Rehabilitation is often thought of as something which begins after the disease is cured. In the case of leprosy, if rehabilitation is to be effective it must begin as soon as the disease is diagnosed, and persist throughout treatment, otherwise psychological changes in the patient, and prejudices among his friends may develop to a point when they are hard to change.

We recommend that leprosy rehabilitation services should be closely integrated with other rehabilitation programmes in general hospitals and clinics even in countries where the anti-leprosy campaign as a whole still has to be organised as a separate unit.

By this means also help may be obtained from other Government departments and from many organisations, and professional groups which until now have used their skills for all diseases but leprosy.

As a first step it is good to obtain the interest of orthopaedic, plastic, and ophthalmic surgeons from medical schools or general hospitals. They may be appointed as consultants to a leprosy service, and should accept patients for reconstructive surgery in their own hospitals. Even though the amount of help they can give may be small, the influence of their position and their action will be great. Simultaneously, physiotherapists, occupational therapists, and medical social workers and those who can give vocational guidance must be drawn into the programme.

When the leprosy problem in a country is very large, it will be necessary to employ some physiotherapists and social workers whole-time on leprosy work alone, but even these should maintain links with general rehabilitation, and should endeavour to treat their leprosy patients either in their own homes or in institutions where non-leprosy patients are also admitted.

While this panel seeks to encourage every leprosy worker to participate in the preventive aspects of deformity, it must strongly discourage attempts at reconstructive surgery by medical officers who have no special training, who have to work in centres where aseptic conditions are doubtful, and who are not assisted by trained physiotherapeutic help in the preparation and re-education of their patients.

It is indeed tragic that in so many countries where the need is greatest there are no surgeons or physiotherapists available, nor training programmes to prepare them. There does not seem to be any immediate prospect of Governmental action to change this.

This panel recommends that in these circumstances this Congress should call on voluntary agencies to co-operate to meet this need. The rehabilitation agency of the World Health Organisation and the International Society for the Rehabilitation of the Disabled should call together some of the charitable and mission organisations already interested in leprosy work, and also societies dedicated to work among the crippled and the blind. Strategic centres, perhaps in medical schools, could be selected for the establishment of Reconstructive and Rehabilitation Units. Such units would treat patients referred from any leprosy

service in any nearby country, and could also begin to train young surgeons and physiotherapists for other centres as each country begins to shoulder its own burden and send its own staff for training.

THE EYE

Blindness in a person with normal tactile sensation is a severe disability. To the man who has lost sensation it is a disaster.

It is doubtful whether such a person can be fully rehabilitated.

Even slight impairment of vision is a far more serious handicap to the patient without sensation than to the normal person.

It is fundamental that we do everything possible to prevent impairment or loss of sight in leprosy patients.

Eye involvement in leprosy, though not necessarily causing symptoms, is exceedingly common. In lepromatous patients from the fifth year of the disease, it is about 90 per cent.

Once an eye has become involved, directly or indirectly, it may at any time become seriously affected and sight permanently damaged.

Most blindness in leprosy is avoidable. Far more people lose sight because of *neglect* than because there really is no treatment for their condition. Patients neglect their symptoms.

Leprosy workers, including doctors, neglect to look for signs. While it is important to remind the patients to report eye trouble at once, leprosy workers must not rely upon their doing so but must organise a time and a place where every patient can have a *regular* examination.

The paramedical worker in the village must be able to check visual acuity in each eye separately and do a brief examination with a torchlight in some indoor room (away from sunlight). The doctor in charge of an institution or clinic must, in addition, be able to examine in a dark room using a well focussing light and a magnifying loupe (x 10). He may have to dilate the pupil with homatropine or to stain the cornea with fluorescene or check the potency of the duct.

It would be of great help if doctors who have to take responsibility for the care of their patients' eyes could be given a full month's training in an ophthalmological institution where they can receive advice from an ophthalmologist and become familiar with special procedures such as tarsorrhaphy, anterior chamber puncture, subconjunctival injection, etc.

Paramedical workers must have special classes and demonstrations in the course of their training so that they can be constantly on the watch for early eye lesions and see that the patient is referred promptly to the doctor.

Broadly speaking, leprosy causes blindness in three ways:

(a) By damage to the facial (7th cranial) nerve causing partial or complete paralysis of the lids. The exposed cornea is liable to drying, to trauma and infection. Corneal ulcer may develop and lead to total destruction of the eye. Impairment of corneal sensation, found particularly in conjunction with chronic lepromatous lesions of the eyes, adds most seriously to the dangers of lagophthalmos.

(b) Sensitisation of the tissues of the eye to substances produced by the bacilli or their breakdown products.

The most serious manifestation of this is acute plastic iridocyclitis, characterised by early formation of dense synaechiae and sometimes complicated by secondary glaucoma.

(c) By direct invasion of the anterior segment of the eye by lepra bacilli. Low-grade keratitis and later irido-cyclitis develop. The latter may flare up with acute symptoms from time to time. Complicated cataract frequently develops. Sight is gradually lost as the ciliary body is destroyed by the lepromatous granulomata.

Where the tissues of the eye are sensitised acute inflammation occurs. Nodules, resembling erythema nodosum lep. develop at the limbus; simultaneously acute irido-cyclitis develops. Left untreated, there is very little spontaneous regression. This condition constitutes a serious threat to sight.

While the majority of patients can be diagnosed under one of these three groups, there will be several cases where all three factors, exposure, sensitivity and lepromatous invasion are together implicated.

ESSENTIAL PRINCIPLES IN THE CARE OF EYE LESIONS:

1. *Lagophthalmos*

Early cases often lose their symptoms and some definitely improve lid function by:

(a) Exercise of lids daily.

(b) Prevention of drying especially during sleep by bland oil.

(c) Minimising infection by mild bacteriostatic agent, ex. 1/2 per cent Zinc sulph.

(d) Use of dark glasses to reduce glare and protect from damage to some degree.

Where the corneal sensation is impaired, where the cornea cannot be covered or where there is already some exposure keratitis, the palpebral fissure *must* be reduced. The best operation for this is the temporalis transfer. If a surgeon is not available, a tarsorrhaphy should be done pending the better operation. Various other procedures have been devised for reducing the palpebral fissure, *e.g.*, a simple sling of silk or nylon around the lid margin or a similar technique using a fascial strip. While not being as effective as the temporalis transfer, they are simpler to perform and the results are less unsightly than a tarsorrhaphy.

If keratitis or a frank ulcer develops, full treatment for these must be instituted. Atropine, cauterisation with iodine, frequent local antibiotic drops and for severe cases parenteral antiobiotics, must be given. Between treatments the eye is carefully bandaged shut.

2. *Acute plastic irido-cyclitis and acute phases of the chronic granulomatous form demand:*

(a) That we stop anti-leprosy drugs and restart very cautiously after the inflammation has subsided.

(b) Full dilatation of the pupil with atropine or other mydriatics.

(c) Countering inflammation by local heat, local corticosteroids and where necessary by anti-inflammatory drugs such as aspirin, irgapyrin, etc. If glaucoma is present, Diamox 250 mgs. t.i.d. for three days usually reduces intra-ocular tension. Full iritis treatment is instituted at the same time. Anterior chamber puncture may be necessary.

These principles hold also for the eye which develops erythema nodosum nodules. In addition we may:

(a) Shave localised nodules from off the cornea and cauterise the limbal vessels.

(b) Where there is any lid weakness and a nodule on the lower lateral limbus a tarsorrhaphy to give protection is indicated. Exposure seems to exacerbate acute lepromata of the cornea.

Suggestions – ask International Society for Blind to come in on this problem.

Finally, in any apparently inflamed eye paramedical workers should stop antileprosy treatment and refer the case at once to the doctor.