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Topics in leprosy

EIGHT SLIDE AND VIDEOTAPE PRESENTATIONS

A new and outstandingly important development at the Congress in Delhi was the use of slide-text and videotape topics for teaching. These were held in different rooms throughout the Congress and they were extremely well attended. English, French and Spanish versions were available. The following topics were selected for the slide presentations:

Immunology. New understandings of the immunology of leprosy and introduction to current terminology, techniques and concepts.
2 *The eye.* The recognition and management of the ocular manifestation of leprosy.
3 *Reactions.* The recognition and management of reactive phenomena and of neuritis.
4 *Nerve damage and rehabilitation.* The pathophysiology of nerve damage and deformity and the clinical management of disability and anaesthetic limbs.
5 *Epidemiology and control.* Approaches to leprosy control and therapy in the field, programme planning, supervision, implementation and evaluation.
6 *Public education.* Education of the public and of patients in leprosy, principles, plans and practices.
7 *'Case taking'.* Clinical examination and smear taking leading to clinical description and diagnosis.
8 *Classification.* The delineation of clinical and histological types in leprosy, using the new Indian classification.

Format. The material is available in print, on audio cassette tape, 35 mm slides and videotape. The latter includes Betamax and VHS formats and PAL and NTSC systems. Videotape is also available in $\frac{3}{4}$ format by special order.

Ordering. Copies may be ordered from American Leprosy Missions, Inc, One Broadway, Elmwood Park, NJ 70740, USA. Costs are as follows: A Slides and script, $16.00; B Slides, tape and script, $20.00; C Videotape/Betamax/NTSC, $20.00; D Videotape/VHS/NTSC, $20.00; and E Videotape/VHS/PAL, $20.00. Prices include air mail postage and all items are available in English, French and Spanish.

A summary of the main content of each title reads as follows:

Leprosy Immunology—Present State of the Art by Tore Godal

The host's immune response to antigens of the leprosy bacillus is of key importance to several clinical manifestations of the disease:

(a) Towards the tuberculoid end of the spectrum, the disease is expressed mainly by a delayed type hypersensitivity (DTH) and granuloma formation.

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(b) Studies both in experimental animals and patients suggest that nerve damage in tuberculoid and borderline patients results from DTH reactions against *Mycobacterium leprae* antigens in nerves.

Another area of intense research is the nature of the immunological defect in lepromatous leprosy (LL). Most recent studies suggest that suppressor cells and deficiencies in T-cell growth factor production are involved in failure to control *M. leprae* multiplication. Thus, evidence continues to point to a defect in the T-cell compartment. Further studies in this field should help in constructing rational immunotherapeutic approaches in LL. The lack of specific antigens from *M. leprae* has put a constraint on progress in immunoepidemiology. New techniques such as monoclonal antibodies, T-cell cloning and recombinant DNA technology provide promising new avenues in this field. These methods will also be of great importance in identifying protective antigens and for designing vaccines produced *in vitro*. Nevertheless, armadillo-derived *M. leprae* has shown promising features in experimental animals and has reached a stage of clinical trials.

The programme will focus on the above-mentioned areas outlined in simplified terms and the new techniques now applied to leprosy and indicate some avenues of leprosy immunology during the next decade.

The Eye in Leprosy by Margaret Brand

Blindness, although not the most common complication of Hansen's disease, is one of the most distressing and feared by the patient.

The eye lesions in advanced disease are often complex and may baffle experienced ophthalmologists. But they do not become so overnight. They begin as simple conditions, often easily recognizable with the help of a good pen-light and magnifying loupe, which can be reversed if detected early.

In the slide presentation the various aetiologic factors are demonstrated. These are summed up as follows:

1 Motor nerve damage. Lagopathalmos. Patient wants to close the eye but cannot.
2 Sensory nerve damage. Patient could close the eye but, being unaware of dryness or other painful conditions, does not do so. Factors 1 and 2 may operate together. Corneal damage then becomes a strong possibility.

To a varying degree all types of HD are subject to factors 1 and 2.

3 Mycobacterial infiltration of anterior segment structures, the iris, ciliary body, cornea and sclera.
4 Inflammatory reaction, the ocular counterpart of erythema nodosum leprosum.
5 Damage to neighbouring extraocular structures: skin—lacrimal system.
6 Secondary infection.

An awareness and recognition of these factors simplifies diagnosis and makes successful management a hopeful outcome. Better yet is to prevent their onset by good case-finding, case-holding and careful attention to the eyes from the beginning.

The Recognition and Management of Reactive Phenomena and of Neuritis by R St C Barnetson

The leprosy bacillus is unique in several ways: one very interesting property is its lack of toxicity. Lepromatous leprosy patients may have 10^{12} organisms within their tissues without any clinical manifestations. The most important complications of leprosy result from immunological hypersensitivity phenomena known as leprosy (lepra) reactions. In some parts of the world, clinicians regard all reactions as having the same pathogenesis, which is unfortunate as the two main types of reactions and erythema nodosum leprosum may be treated very differently.

Borderline leprosy reactions are a common cause of major nerve destruction, and are due to an

increase in delayed hypersensitivity. If the patient is treated early and with adequate doses of steroids then permanent nerve damage can be avoided. Erythema nodosum leprosum results from immune complex formation, and may be accompanied by arthritis neuritis, iridocyelitis, orchitis and nephritis: if it is frequently recurrent then permanent damage may result. Prevention by the use of clofazimine, thalidomide and steroids make long-term complications less likely.

Nerve Damage and Rehabilitation by Paul Brand

Most of the complications of leprosy that result in permanent disability and stigma are due to the damage to peripheral nerves.

If patients are to recover completely from the effects of the disease it is necessary: 1, to minimize damage to nerves; 2, to compensate for paralysis; and 3, to prevent damage and destruction to limbs that have lost sensation.

In this slide set the cause and pattern of nerve loss is explored, and methods of prevention outlined.

Surgical rebalancing of the limbs is advocated but not detailed.

The damage to insensitive hands and feet is seen to be due to:

(a) Penetrating injuries from sharp objects and burns that destroy the skin.
(b) Sustained pressure from tight shoes or straps which destroy skin by keeping it bloodless for hours at a time.
(c) Repetitive stress on parts of the foot that take most of the thrust of walking, and repetitive stress on parts of the hand that hold the handles of tools. This constant repetition may result in inflammation and then blister and breakdown. It is often worse because of pre-existing paralysis or deformity that exposes just one or two parts to stress.
(d) The most severe damage is caused by continuing use of a limb that is wounded. The importance of special footwear, splints and plaster casts is emphasized.

Epidemiology and Control by M F Lechat

This series on epidemiology and control reviews the present strategy of leprosy control and the epidemiological rationale which underlies it. After presenting the magnitude of the leprosy problem in the world, and the main epidemiological indices used, i.e. prevalence and incidence, the potential methods of leprosy control are critically discussed: segregation, chemoprophylaxis, chemotherapy, and possibly in the future, vaccinations. Their advantages and drawbacks are reviewed.

Leprosy control at present is based on early detection of the patients as a source of infection and negativation of the reservoir through chemotherapy. The organizational aspects of this strategy are presented, together with present constraints and requirements. The consequences of drug-resistance, with the resulting need for multiple therapy, are given particular emphasis. The ultimate aim of integrating leprosy control into primary health care, with full participation of the community, is stressed.

Health Education for Patients and Public in Leprosy Control by P Jane Neville

This audio-visual production is based on the work of the Leprosy Control Unit at the Richardson Hospital, Miraj, Maharashtra, India. It is one of the 23 leprosy control units staffed by The Leprosy Mission in India.

The presentation was filmed with the staff as they carried out an intensive health education campaign prior to the introduction of multidrug therapy. The viewer is stimulated to ask 3 important questions about the health education campaign: 1, How is health education planned? 2, How is it carried out? (methods and media); and 3, What are the results? (evaluation). The terms

'health education' and 'health information' are often confused and an attempt is made to differentiate between these two terms. The presentation sets out to identify factors which seem to be important for the success of health education not only in this project but in other projects as well.

The viewer is shown not only the health education activities which are an integral part of the Miraj Leprosy Control Unit, but is also introduced to the theory behind an educational campaign. This is done by means of diagrams, sketches, tables and cartoons, as well as photographs.

'Case Taking' in Leprosy by K Ramanujam

Leprosy, in the majority of instances, lends itself for diagnosis on the basis of a proper clinical examination alone. Hence it is mandatory that a set pattern is followed in the examination of an individual for the presence of leprosy. This procedure is known as 'Case taking' in leprosy.

The prerequisites for undertaking this procedure are: to remember that leprosy is no respecter of persons; awareness of the occurrence of leprosy in the community, especially in areas where leprosy is endemic; a pair of observant eyes; an unbiased mind; an attitude that will never take things for granted; and lastly, familiarity with the early manifestations of leprosy and the clinical signs of the disease.

'Case taking' consists of:

1 Interrogation. (i) Collection of biodata of the individual such as name, age, sex, occupation and place of residence; (ii) family history of leprosy; (iii) history of contact with cases of leprosy; (iv) details of previous treatment for leprosy, if any; and (v) presenting complaint or symptom.
2 Clinical examination. (i) Inspection of body surface, to the extent permissible, in good natural light for the presence of suggestive or tell-tale evidences of leprosy; (ii) palpation of the commonly involved peripheral and cutaneous nerves at the sites of predilection for the presence of thickening and/or tenderness; and (iii) testing for evidence of damage to the sensory or motor component of the peripheral nerve, such as: (a) sensory changes in the skin, patches, or the peripheral parts of the limbs, and (b) paresis or paralysis of the muscles of the hands and feet leading to disabilities or deformities.

The 'Case taking', as far as possible, should be supplemented by the taking of smears from the skin and the nasal mucosa by standard methods and examining for the presence of *Mycobacterium leprae*. This will enable the detection of the very early lepromatous cases which, otherwise, will be missed.

Clinical and Histological Types by K V Desikan

In view of the variegated clinical manifestation of leprosy, classification of the disease is extremely important. Also the presentation of the disease has certain peculiar clinical features in different countries. It is therefore necessary to have a system of classification which would be fully representative of the clinical pattern of the disease in India. Secondly, several categories of workers are engaged in the study of leprosy from the basic field worker to the highly academic research scientist. A classification therefore should have basically a uniform approach to workers of all levels. Thirdly, the classification should be simple and essentially clinical, not depending on the need for sophisticated investigations. A new classification of leprosy worked out by Indian leprologists aims to fulfill the needs mentioned above. The new classification is a five group classification. While there is no confusion regarding the polar types of leprosy, a peculiar feature of leprosy in India is the occurrence of a large proportion of cases with flat or macular lesions. The new Indian classification defines the clinical, bacteriological and histological features of these lesions to assign them to their proper place. Another important group of cases frequently seen in India are the ones with pure neural involvement which have been assigned a separate group.

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The following information is taken directly from the information sheet which accompanied the videotape programmes:

Mice Against Leprosy. Prepared by Dr J Almeida. Duration 10 min.
Painless Feet. Prepared by Dr E P Fritschi. Duration 15 min.

The above videotapes are available in VHS, Betamax and U-matic formats in the PAL System with English Commentary.

French and Spanish language versions will be produced if there is sufficient demand.

The price of each programme will also depend on overall demand. But it will probably be in the region of Rs 325, i.e. cost of a blank videotape and shipping.

Karigiri Video is based at the Schieffelin Leprosy Research and Training Centre, Karigiri-632106, Tamil Nadu, India.

The project was established in 1983 with the support of American Leprosy Missions and the Sasakawa Memorial Health Foundation to produce a comprehensive series of video programmes for training medical officers in leprosy.

It is staffed by professional production personnel and collaborates with the outstanding teachers in leprosy. About 12 programmes will be produced each year.

In addition to programmes for medical officers, Karigiri Video will be developing community education material and programmes for other health workers.

Karigiri Video will be available to produce special programmes on commission. Project director for Karigiri Video is Mr Michael Barnes.

For further details write to the above address stating which videotape you require, which PAL system and language you require together with your name and address.