Diagnosis and Treatment of Eczema

by Dider Hossain Bhuiyan

THE terms eczema and dermatitis are synonymous, although dermatitis is generally used more to describe a skin reaction to external agents, while eczema is more commonly used to describe endogenous or constitutional reactions. Dermatologists tend to use the wolds interchangeable. A summary of the different types of eczema is presented in Table 1.

Clinical features

The most distinctive symptom of eczema is itching, which is often severe. Erythema, papules, vesicles with exudation of serum (weeping) crusting and scaling are common features, although not all may be present. When the problem is chronic, a thickening of the skin with accentuation of the normal skin markings may occur because of constant rubbing or scratching. In the more acute phase, the skin is often excoriated with small areas of hemorrhage caused by scratching. As a result, secondary infection is common in eczema.

The distribution of the eruption varies, according to the type of eczema involved, for example atopic eczema tends to affect the flexures of the elbows and knees, together with the face and neck, while exogenous eczema affects those areas which come into contact with the irritant or sensitising agent. Atopic eczema is more likely to be symmetrical.

Atopic Eczema

Atopic eczema is a common condition, affecting three per cent of all infants. It is linked to other atopic diseases, such as asthma and hayfever, and has a strong genetic correlation. Atopic diseases can, however, be present in patients with no relevant family history.

The majority of eczema sufferers start with symptoms in infancy or early childhood, and although in most cases the eczema gradually gets cured with age, the skin remains vulnerable to irritants throughout life.

The precise pathogenesis of atopic eczema is unknown but emotional stress may affect the extent or severity of the condition. The role of food allergens remains controversial.

The most common areas involved are the fact and neck, the knee and elbow flexures, and the wrists and ankles. The disease tends to wax and wane but 90 per cent of all patients are clear of eczema by the age of 15 years. In some patients the condition may recur in adult life. rarely, atopic eczema can occur for the first time in adulthood.

Patients with atopic eczema tend to have a dry, flaky skin which contributes to itching. The use of emollients and avoidance of "over- bathing" can cure this.

Table: 1 Types of Eczema

Endogenous eczema	Atopic eczema Seborrhoeic eczema Nummular or discoed eczema Asteatotic eczema Varicose eczema
Exogenous eczema	Primary irritant dermatitis (eg, to fibreglass) Allergic contact dermatitis (eg, to metal)

Table: 2 Corticosteroid potency (BNF classification)

Group Potency	Examples
Iv Mild III Moderately potent	Hydrocortisone 1% Clobetasone butyrate 0.05% (Eumovate)
II Potent	Betamethasone 0.1% (Betnovate) Hydrocortione buytrate (Locoid)
I Very potent	Clobetasol propionate 0.05%

Other Endogenous Eczemas

Seborrhoeic eczema: Seborrhoeic eczema normally erupts as redness and scaling of the scalp, with patches around the face and ears, on the chest or between the shoulder blades. Despite the name, it is not related to the sebaceous glands and may be found on dry skin.

On the trunk, the condition normally responds to topical hydrocortsone, although symptoms may recur when the treatment is stopped. Tar shampoos and topicalsteroid lotions may be used to control the scalp problem.

Nummular eczema: This condition is sometimes called discoed eczema. It consists of rounded patches which can be scattered all over the body. These are usually vesicular and extremely itchy. The treatment of nummular eczema is the same as for atopic eczema.

Astoetotic eczema: This condition is common among the elderly and is related to drying out of the skin, particularly over the front of the legs. The skin takes on the appearance of crazy paving with superficial fissures. The condition responds well to demollients and a mild steroid.

Varicose eczema: Varicose eczema is associated with poor venous return or varicose veins. It is characterised by irritation, redness and scaling. Pigmentation may occur, with the skin taking on a brown colour. Sensitisation to topically applied medications can exacerbate the condition and the dermatitis may spread to other parts of the body. The use of medicated bandages such as lchthopaste, Viscopaste and Calaband may be effective.

Exogenous Eczema

Primary irritant dermatitis: The most common cause of hand dermatitis is "wear and tear," or an irritant contact dermatitis which arises, from the repeated minor traumatisation occurring during work or in housework. The introduction of irritants into the work process or excessive drying are common cause of irritant dermatitis.

An irritant can be defined as a substance which will cause an eczematous reaction in healthy skin if applied in sufficient concentration. Common irritants include skin cleaners, alkalis, solvents, cutting fluids. Oxidising or reducing agents and some enzymes and medicaments. Repeated hand washing, dry conditions, or extremes of temperature can also play a part. Pre-existing skin disease such as atopic eczema, predisposes the patient to irritant dermatitis.

Allergic Contact Dermatitis : Allergic condition occurs as a result of delayed hypersensitivity to a substance following previous exposure. Sensitisation can occur within days of initial contact with an allergen, or can develop after months or even years of exposure to the allergen. Once sensitised, even brief exposure can produce a severe dermatitis within one of two days.

Patch testing can be for identifying specific allergens which should be performed while the dermatitis is in the acute phase as false positives may result and there is a risk of provoking an exacerbation.

Management of Eczema

Avoidance of irritant or sensitising agents is the best method of management of primary irritant or allergic contact dermatitis.

Acute Eczema

Topical steroids (Table-2) are the mainstay of treatment of the acute inflammatory phase of the disease, in both adults and children. As the severity of the eczema wanes, progressively less potent topical steroids should be substituted.

The potency of steroid used depends on the clinician's estimate of the severity of the condition. However, some areas are restricted to the less potent steroids, for example, facial eczema is usually only treated with hydrocortsone.

Potassium permanganate 1 in 8,000 soaks can be particularly useful in the management of acute "weeping" eczema. This treatment prevents secondary infection and reduces weeping but should not be continued for too long as it may cause overdrying of the skin.

Evening primrose oil has recently been licensed for the management of atopic eczema and has achieved beneficial effects. Its use relates to the suggestion that patients with eczema might have a deficiency in y-linoleic acid, an essential fatty acid, because of its inability of metabolise the precursor compound, linoleic acid. Evening primrose oil is a source of y-linolenic acid.

Infected Eczema

Secondary bacterial infection should be treated with an appropriate systemic antibiotic, perhaps in conjunction with a steroid cream containing an antimicrobial such as clioquinol. The use of steroid creams without antibiotic cover only serves to exacerbate the infective condition.

Herpes simplex infection may be extensive in individuals suffering from atopic eczema, and is associated with significant morbidity. Patients with suspected herpes infection, including cold sores, should be referred immediately to their general practitioner.

Chronic Eczema

Although steroid creams and ointments remain the cornerstone of suppressive therapy, the use of emollients is also of great importance in the management of chronic condition. Dry scaly skin, which leads to itching, can be improved by the regular use of emollient creams and ointments and by the use of soap substitutes.

The choice of emollient is based largely on patient preference, as is the choice between a cream or ointment base for topical steroid treatment. Emollients should be applied before the after bathing, while the skin is still moist.

Products containing urea may be of value in chronic eczema because of their keratolytic and hydrating effects, sedatives, antihistamines can help to reduce nocturnal itching but monsedative antihistamines are of no benefit. Pharmacists should counsel the patients with eczema to avoid the use of highly perfumed soaps and bath additives, as they can irritate the skin.

Surgery of the Future — Through a Keyhole

by Sanjiva Wijesinha

WHEN doctors from all over the world met in Hong Kong for a world congress on liver and gall bladder surgery the focus fell on laparascopic surgery — a new and controversial subject that hepatic surgeons all over the world are talking about these days.

Surgeons have conflicting views on laparascopy. And patients and prospective patients, accustomed to an operation meaning a procedure in which surgeons cut open the abdomen and leave a patient with an unsightly scar, are beginning to seek information.

The Laparascope, rather like a long telescope, first came into use around the beginning of the century.

Its main function then was to diagnose conditions within the abdomen. Since it could be inserted into the abdomen through a small keyhole-like opening, doctors used it to have a good look at internal organs such as the liver, gall bladder, intestines, womb, ovaries and spleen.

With the advent of video technology, a small video camera could be mounted onto the eyepiece of the Laparascope and the view inside the abdomen clearly seen on a TV screen.

Since everybody knows that one good look is worth a thousand laboratory tests, laparascopy came to be used by surgeons and gynaecologists to diagnose accurately conditions within the abdomen.

Only in the second half of the century has the medical world begun to realise that the Laparascope could be used not only to look at, but also to manipulate, cut, tie and even remove internal organs.

Through one or more tiny incisions — keyholes each a few millimetres in diameter — simple operations began to be performed.

Among the first such operation to come into vogue was that of tubectomy or female sterilisation — a procedure in which a women's Fallopian tubes are tied off so that eggs from the ovaries can no longer reach the womb.

This operation is one of the commonest performed today, since it is probably the most effective means of birth control available. Modern gynaecologists, using the Laparascope, can perform sterilisation operations quickly, effectively and safely — leaving just an inch-long scar inside a woman's navel to remind her of the operation.

Says Sri Lankan gynaecologist Palitha Kumarasinghe, an expert in laparascopic sterilisation who has personally done 50,000 such operations : "By using the Laparascope, a safe and effective sterilisation operation can be done in less than a minute. The procedure is performed under local anesthesia and the patient can go home on the day of surgery itself."

The success of gynaecologists in using the Laparascope to operate on organs inside the abdomen without having to cut patients up, prompted surgeons to probe the possibility of using it for other common operations.

As to who performed the first laparascopic gall bladder operation is open to debate. Dr. F. Dubois from Paris was the first to publish his results. His personal series of 68 such operations was reported in La Press Medicale in May 1989.

Operations to remove the gall bladder (Cholecystectomy) are among the commonest surgical operations performed throughout the world. Over the last 13 years, thousands of patients have had their diseased gall bladders removed via a Laparascope.

For the patient having the gall bladder removed this was is no worse that having a tooth out.

With no large operation wound stretching across the abdomen to give pain, a patient needs to stay in hospital for only a couple of days. Even the time taken to return to work is reduced from a little over a month to little over a week.

Other common abdominal operations are also being done today by this new peephole surgery. If appendicitis is suspected, a surgeon can now insert a Laparascope into the abdomen through a one-inch peephole, and make sure the appendix is inflamed before embarking, through the same tiny hole, on removing the affected organ.

The patient ends up with a much smaller scar and minimal post-operative pain and he or she is saved from being wrongly diagnosed and cut open to have a normal appendix removed.

Surgeons are becoming increasingly adept at finding new uses for the Laparascope. They can now laparascopically remove portions of lung and even the oesophagus. They are also stitching up perforated stomach ulcers, relieving certain forms of intestinal obstruction and even repairing ordinary groin hernias.

The beneficiaries of this modern technology are patients. Operations are no longer the painful, scarring procedures they used to be, and the time for recovery so much less.

There is one big drawback : the cost is enormous. The initial outlay for a hospital hoping to perform laparascopic surgery is high, each complete set (laparascope, surgical instruments, videocamera and monitor) costing between 10-20,000.

Added to this is the recurring expenditure for all the special disposable instruments, such as scissors, electrodes etc. which have to be discarded after each operation.

At present, hospitals which provide standard choecystectomy as a free service in most parts of the world are asking patients to pay for their operations if they want their gallbladders removed by the laparascopic method.

On the other hand, in the United States, most insurance companies — perhaps influenced by the companies that make the expensive instruments required for laparascopic surgery — will pay only for patients to have their gallbladders removed if the operation is done laparascopically.

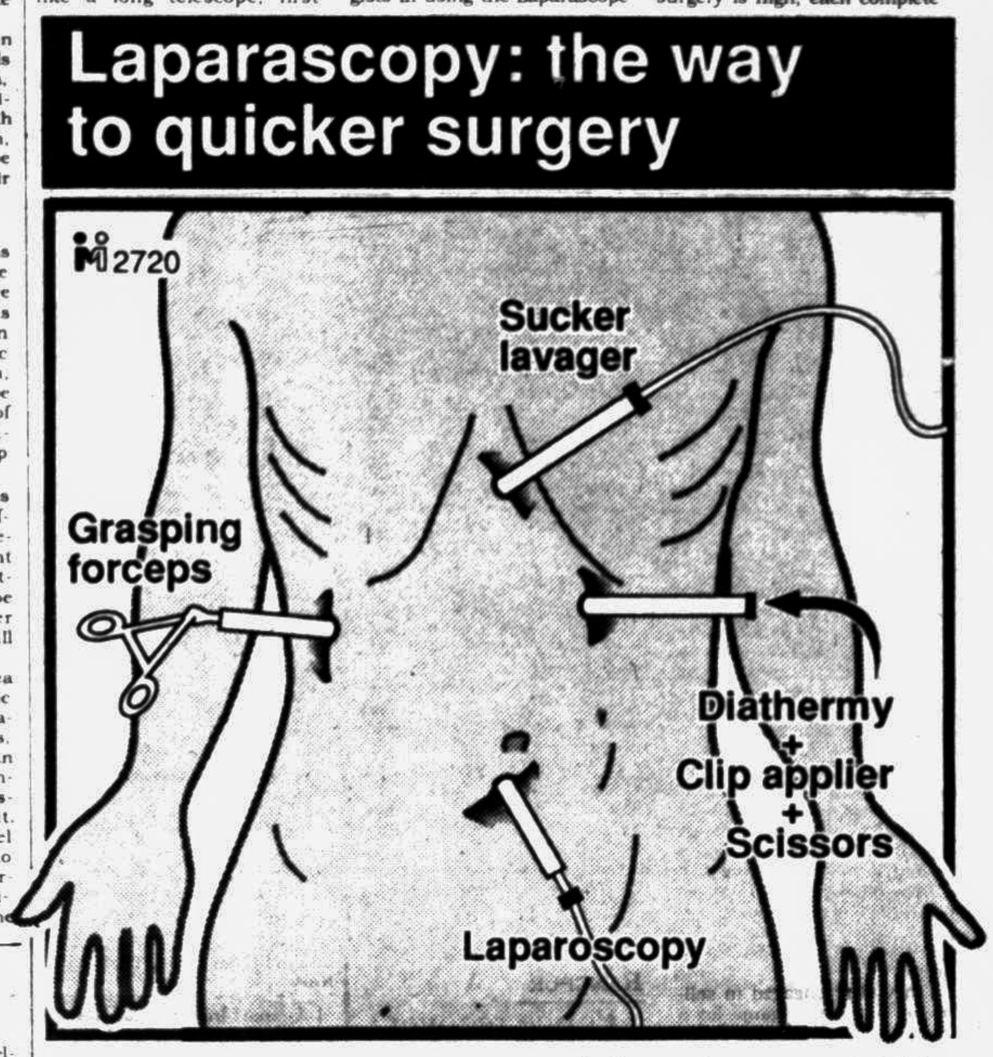
Surgeons are still debating the pros and cons of the new technique — and doubtless will continue to do so long after the recent 4th World Congress of Liver and Gall-bladder surgery in Hong Kong.

Being still in its infancy, more time is needed before laparascopic surgery can be objectively assessed and compared with standard "scalpel surgery."

On present indications, however, it would appear that the keyhold procedure is here to stay — and could well become the surgery of the future.

— Gemini News

Dr SANJIVA WIJESINHA trained in Sri Lanka, Oxford and Melbourne, in himself a busy surgeon — and regularly writes for Gemini on medical and health issues.



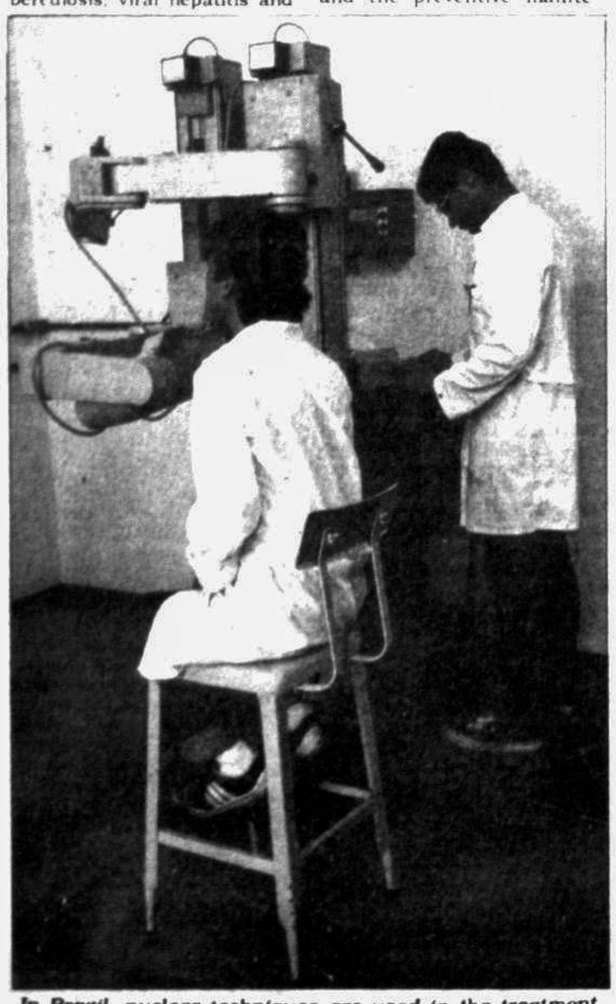
Using Nuclear Power to Save Life

IN recent years, the Agency's programmes in medical applications of nuclear technology have become more clinically oriented and designed to cater to the actual needs of hospitals in Member States.

Support is provided for research into nuclear techniques useful in the study of diseases prevalent in developing countries.

New techniques, such as the use of radioaerosols for lung imaging, has been introduced to hospitals in many developing countries.

The introduction of simpler, inexpensive, in vitro nuclear techniques for the diagnosis of thyroid diseases, tuberculosis, viral hepatitis and malaria has made nuclear medicine more relevant to the priorities and concerns of health care in those countries.



In Brazil, nuclear techniques are used in the treatment of thyroid disorders. (Photo: Schytte/WHO)

Work on these medical concerns is carried out in cooperation with the World Health Organization (WHO). In 1990, interagency consultations on the scientific programmes of the two organizations resulted in an action plan covering areas of mutual interest.

Nuclear medicine

Valuable in the transfer of technology in nuclear medicine is hands-on assistance through technical co-operation projects as well as training and fellowships for representatives from developing Member States.

Courses and workshops in 1990 covered such varied fields as medical scintigraphy, immunoscintigraphy, the use of tumour markers, radioimmunoassay and quality control, and the preventive maintenance of nuclear medicine instruments.

Major research programmes in developing countries focussed on radioaerosol inhalation imaging of the lungs for the diagnosis of respiratory diseases. Work in this area will result in the production of an atlas on aerosol inhalation lung imaging to assist physicians in the clinical in terpretation of types of images.

Other research programmes resulted in a wide-scale trial to increase the feasibility of screening for neonatal hypothyroidism in iodine deficient regions.

Radiation biology and radiotherapy

As part of the programme to promote national health care services in developing countries, there has been continued recognition of the prevailing risk in the Latin American region of patients contracting cross-infectious disease resulting from inadvertent clinical use of non-sterile medical items.

This issue prompted the initiation in 1990 of a research programme or radiation sterilization of medical supplies in the region. A similar programme in Africa and the Middle East resulted in a research database on sterilization of local medical supplies.

Biological tissue graft implants, such as bone, nerve, fascia, dura, and chorion amnion dressings for burn wounds have been successfully sterilized by gamma radiation in eight Member States in the Asia and Pacific region as part of a regional research programme.

A research programme on biological dosimetry for use in estimating absorbed radiation doses as part of radiation protection and risk assessment operations was completed.

Other research programmes were conducted on feasibility studies for sewage treatment and safe recycling; improved radiotherapy facilities in developing countries; approved quality and accuracy in the radiotherapy of carcinoma of the cervix; and a global programme on head and neck cancers.

Recent advances in radiation biology using precision molecular techniques offer new possibilities for studying the effects of very low doses of radiation.

This research trend is reflected in low dose, radiation associated risk estimation studies and will help to clarify the existing uncertainties in dose-response relationships.

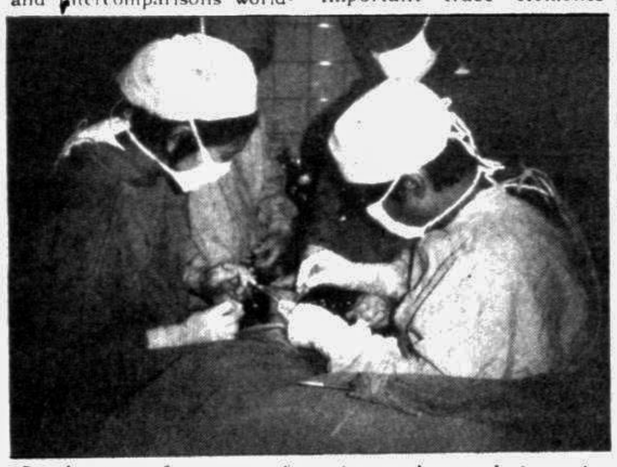
Dosimetry

The number of Secondary Standard Dosimetry Laboratories (SSDLs) increased in 1990 to 66 laboratories in 51 Member States. Services continued in the areas of dose intercomparison and assurance.

Research efforts included the collaboration of nine institutes to improve high dose electron dosimetry, reduce measurement uncertainty, and develop new dosimetry techniques.

An international symposium examined the improvement of dosimetry techniques and systems; the development of new dosimetry techniques; and international co-operation for the worldwide standardization of high doses to utilize dosimetry as a quality control measure in radiation processing to facilitate the regulatory approval of irradiated products.

Laboratory work continued to respond to requests for routine dosimetry for hospitals and intercomparisons worldwide; calibration of dosimeters and field instruments; reference irradiation; development of intercomparison methodologies; and training.



Sterilization of tissue grafts using nuclear techniques in Asia.

Nutrition and the environment

Recent surveys in the field of human nutrition have revealed diverging trends in nutritional status in countries worldwide, with the situation worsening in many.

This, coupled with a growing awareness of the role of nutrition in relation to mental development in children, work performance in adults, and chronic diseases in older persons, has resulted in the identification of nutrition as a priority topic for the 1990s.

The health effects of environmental pollution are likewise attracting increasing worldwide attention.

A new research programme has begun to study the bioavailability of iron and zinc from human diets with the aid of isotopic tracers.

The programme aims to address the global problem of more than 500 million people, particularly those in the developing world, who suffer from iron deficiency anaemia. The underlying cause in many cases in not an absolute deficiency of iron in the diet but poor bioavailability.

It is hoped that local foodstuffs containing bioavailable iron will be identified to study the factors promoting and inhibiting absorption and to investigate concurrent effects on the bioavailability of other trace elements, particularly zinc.

Other studies in nutrition centred on the use of doubly-labelled water methods for measuring energy expenditure in humans and on human daily dietary in take of nutritionally important trace elements measured by nuclear and other techniques.

A research programme to help determine the toxic elements in foodstuffs was completed and produced improved radiochemical separation methods and analytical quality control procedures, while another centred on the assessment of environmental exposure to mercury in selected human populations.

The IAEA Marine Environment Laboratory (IMEL) organized worldwide intercalibration exercises for the analyses of trace metals, chlorinated hydrocarbons, and petroleum hydrocarbons in marine sediments and conducted missions to assist in setting up quality assurance programmes in Member States.

Research on rapid instrumental and separation methods for the monitoring of radionuclides in food and environmental samples continues and assistance was provided in investigations into the transport, fate, and effects of agrochemicals in tropical coastal systems.

— IAEA

Non-Invasive Test Diagnoses Hard-to-Detect Disease

FLINERS Medical Centre researchers in Australia have developed a simple, non-invasive test for diagnosing a form of gall-bladder disease which previously went undetected by contentional techniques, reports *Australian Science and Technology Newsletter.*

The test identifies patients whose gall-bladders do not empty normally, despite an absence of gall stones and whose symptoms can lead to the gall-bladder's removal, reports.

The painful symptoms experiences by people with gall-bladder disease usually are due to stones which blood the cystic duct and prevent the gall-bladder from emptying.

However, a small group of people experience the same clinical biliary symptoms despite the fact that repeated investigations of the gall-bladder with ultra-sonography or cholecystography fail to reveal gall-stones or any other cause of the symptoms.

The Adelaide team's test of abnormally functioning gall-bladders measures the rate at which its empties in response to a stimulus. A radio nuclear technique called cholescintigraphy, using pepatobilliary agents labelled with the radio isotope Technecium, is used to measure the response of the gall-bladder to continuous infusion of cholecystokinin, a hormone which causes the gall-bladder to contract and empty.

The majority of patients whose gall-bladders were identified as emptying normally lost their symptoms either spontaneously or after a non-biliary diagnosis and appropriate treatment.

Head of the gastrointestinal surgery unit at the centre, Professor Jim Toouli, said: "This simple, non-invasive method of identifying a disease which will respond to cholecystectomy is extremely useful in the evaluation of patients with biliary symptoms and no radiological evidence of gall-stones.