The Singapore Family Physician

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❶ Safety and Efficacy of Topical Minoxidil in the Management of Androgenetic Alopecia – Robert L. Rietschel, M.D. and Susan H. Duncan B.S. J. AM ACAD. DERMATOL 1987; 16:677-85.

❷ Dose – Response Study of Topical Minoxidil in Male Pattern Alopecia – Jerome L. Schupack, T. Thirumoorthy et al J. AM ACAD. DERMATOL 1987; 16:673-6.

❸ Long-term Efficacy of Topical Minoxidil in Male Pattern Baldness – H.I. Katz M.D. et al J. AM ACAD. DERMATOL 1987; 16:711-8.

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EDITORIAL

THE GAP IN HEALING

Any young doctor going into general practice will have agonised over the nature of his work in his first few years. He will find that his store of medical knowledge is slowly being depleted as what he has learnt in medical school and the hospitals is rapidly forgotten through disuse. In addition, he meets plenty of patients whose complaints, he feels, merit little attention from him. There are the "nonsense" patients who are taking away his precious time and preventing him from doing more for his diabetic and heart patients. It is after many years of groping in the vocational doldrums that the young general practitioner finally understands, if he ever does, the subtle and complex ramifications that are involved in an illness and sees the gap in his knowledge and attitude.

DEFICIENCIES OF THE TRADITIONAL MEDICAL CURRICULUM

The fault lies with the system under which the doctor is trained. Traditional medical curriculum only trains the medical students to recognise organic illnesses. It is so blinkered that the student ends up seeing a patient only from a very narrow perspective. This deficiency is discussed in "Problems of Living" in this issue.

The training of a doctor is carried out in the wards of a hospital. It is inevitable that students taught in such a setting will form the impression that 'real' illnesses are only those that are seen in the wards. Only physical illnesses with an organic cause are studied with great interest. All other sufferings and pains from other causes are not explored.

Medical textbooks write in great details about diseases that are commonly seen in the hospitals. Students focus their attention on illnesses that provide some drama and danger, on the pharmacology of drugs and on the high-tech equipments that turn up rapidly on the market. They have to concentrate on all these things if they want to pass their examinations because it is the patient with a grave disease and plenty of gross clinical signs that they will be tested on.

As a result of all this training, all doctors approach their patients in the same narrow systematic manner. They take a history. The family and social histories are briefly taken and quickly forgotten. They are never intended to help the doctor explore the patient's illness from another perspective. They perform a physical examination, conduct investigations, label the patient's illness with a recognised diagnosis and finally prescribe the drugs.

Such a training and approach, while appropriate for the hospital doctor, is inadequate for the primary health care doctor, particularly the general practitioner.

THE PSYCHOSOCIAL DIMENSION OF MEDICAL CARE

Such a gap in knowledge and training is the cause of the agony of a young general practitioner in his early years. He is like a mountaineer, well-equipped with a lot of heavy tools, left with no mountains to climb but a vast plain to cross. Yet he continues to drag himself across the plain with these same tools with his mood lifted every time he comes across a molehill.

Encountering organic diseases is only a part of a general practitioner's work. Even then, these diseases are seldom devoid of psychosocial problems. A person who develops a physical illness will undergo some kind of a psychological change which will also affect the members of his family and friends. Thus, while it is often taught that the physician should exclude the presence of any organic disease before coming to a phychological diagnosis, it

should also be taught that when a diagnosis of a physical illness is made, the doctor should also exclude any psychological disorder.

Apart from patients with organic problems, the general practitioner also sees a large group of patients whose illnesses belong neither to the realm of the physician nor the psychiatrist. These patients complain a lot and consult very often, but usually nothing abnormal could be found on examination. They are people who are largely affected by psychosocial factors that have became inimical to their well-being.

These are patients who are affected by psychological problems, who suffer from reactions to psychosocial factors or who need management for their organic problems from a functional angle.

No doctor has been formally trained to see and manage such patients and hence, they are usually considered, particularly by the fresh general practitioner, to have "unreal" illness and are the 'nonsense' patients.

Organic medicine makes sense because of Claude Bernard. This great physiologist was the first to describe the stable state of the milieu interieur that all bodily systems require if they are to function normally.

General Practice would be easier to grasp and would make more sense if someone would sit down and start describing the stable state of the external environment that is required for a person's well-being. Perhaps future advances in the field of psychoneuroimmunology will throw light on this field.

Emotional suffering and pain can hurt as much as organic diseases. Apart from consulting their doctors for the relief of symptoms of medical illnesses, for normal medical services like medical checkups, vaccinations, certifications etc. and for the follow-up treatment of chronic illnesses like diabetes, hypertension, schizophrenia etc., patients will continue to see their doctors as a response to their anxieties, to obtain a psychological advantage in relation to others, for support and for playing games and acting out drama.

WHY THE PATIENT CAME

In general practice, therefore, the doctor must sometimes take a totally different approach from what he is taught at medical school. He must not always try to look for some identifiable organic disease in his patients, otherwise anyone on whom he could not stick a diagnostic label will irk him. Rather than ask "What is the diagnosis and pathology behind the patient's illness?" the doctor should reflect on why the patient is consulting him in the first place. By searching hard all the time for an organic diagnosis and treatment, the doctor may not be able to recognise problems and treat them.

Patients who present themselves to the general practitioner often offer problems that do not allow clear-cut diagnoses or rapid cures. It is the doctor, taught by traditional medical curricula to look through one window, who tends to reduce everything to a clear-cut illness pathology thus making general practice the simplest of medical fields. A child with a cough will only have his throat and lungs examined, a person with giddiness will hopefully have a little raised blood pressure to justify the symptoms and any pain in the joints is reduced to rheumatism. The emotional and psychosocial areas are not explored because no other windows have been opened to the students in medical school. With such a gap in his training, the doctor is less likely to explore vague emotional areas and tends to feel very uncomfortable treating his patients in what he considers to be non-medical ways.

TOOLS OF GENERAL PRACTICE

The articles "Treatment of Palmar Hyperhidrosis" and "Approaches to Psychiatric Disorders" in this issue show some of the tools that are available, but any doctor wishing to extend his range of skills will have to find ways to acquire them for himself.

The problem facing the general practitioner is, therefore, not that he lacks "good" cases to practise good medicine but

that he lacks a theoretical framework to guide him to evaluate and treat satisfactorily all patients who step into his room. Most of the time, the general practitioner has to evolve his own pragmatic system to deal with problem related to the behaviour of his patient. Generally, this is nothing more than giving some kind of sympathy, showing kindness, giving encouragement and reassurances, dishing out some commonsense advice and adopting a more caring attitude. However, such methods are seldom therapeutic enough because few doctors are able to make the patient feel that he is being understood at a deeper level. The general practitioner must be trained to understand the patient and to give the patient the feeling of being understood. He must be taught to verbalise his understanding in a way that is meaningful to the patient. Many doctors, young ones in particular, like to warn, moralise and condemn which does little to help the patient's problem.

Anthony Clare, Professor of Psychological Medicine at St. Batholomew's Hospital Medical College, London said, "Many general practitioners are able to put aside as much time to see particular patients as can be provided by busy psychiatrists, but there is no doubt that rushing the general practice consultation, avoiding or otherwise failing to pick up verbal and non-verbal signs and asking mainly directive questions do reduce the general practitioner's ability to diagnose psychological distress."

The fault lies in the gap in our training. Unless we can fill this gap, we will, whatever the excellent state of our health care, have a large group of our primary health care patients wandering around, unsatisfactorily treated, hopping from one doctor to another and falling prey to the quacks and the unscrupulous.

WWN

ORIGINAL ARTICLES

PROBLEMS WITH LIVING

Dr Kee Chin Wah, Patrick, *MBBS, M MED (Int Med), FRACP*

At the Teaching Seminar conducted on 30th April 1988, the topic "Problems With Living" was discussed. This paper is based on the talk presented at the Seminar.

INTRODUCTION

Problems with living very often lead to stress which in turn results in illness. The hospital approach to diagnosis and treatment is based on the biomedical model of illness and often ignores the psychosocial factors involved in the pathogenesis of disease. However, a high proportion of patients in general practice present with psychosomatic disorders in which the causative role of the problems with living can easily be elucidated. Unfortunately, the training received in medical school often does not equip the general practitioners with the necessary skills to deal with such problems. The objective of this paper is to highlight the importance of recognising "Problems With Living" as one of the factors involved in illness behaviour.

THE ROLE OF THE GENERAL PRACTITIONER

It is the general practitioner who is in the best position to help patients who have problems with living. Dr James S McCormick pointed out that the strength of the family practitioners in dealing with undifferentiated problems lies in their ability to listen and to hear what their patients are telling them. However, the skills of listening to what is said and noticing what is not said and the nonverbal cues that accompany the manner of its saying are not automatic. McCormick noted that such skills require patience, concentration and practice. These are essential in the first phase of problem definition which is, discovering why the patient came to see the doctor.[1]

Ghim Moh Clinic & Surgery
Blk 11, Ghim Moh Road #01-72
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Case 1

A 34 year old female clerk married with one child consulted several gastroenterologists for epigastric discomfort and regurgitation of "sourish fluids" after food for nearly one year without improvement. She became more and more depressed as repeated gastroscopies and other investigations proved negative. She thought that she had a serious and complicated disease which could not be detected. When she was seen by her general practitioner, she was on the verge of suicide. She developed difficulty in swallowing and consequently lost weight. All these only served to fuel her suspicion that she had a very serious ailment. The patient was allowed to ventilate her anxieties and fears about having cancer. Subsequently, she recognised and accepted her feelings of depression. She was reassured by the general practitioner that the gastroenterologist would be contacted to ascertain the results of all the investigations that had been done. When the gastroenterologist was contacted, he confirmed that no organic disorder had been found and that some of the tests had in fact been done at the patient's request.

After a course of antidepressants, the patient improved and on the subsequent

consultations, it became apparent that the stress at her job coupled with her anxieties about her husband's job was a major cause of her symptoms.

THE PROBLEM-ORIENTED APPROACH

All doctors are trained to make a definitive diagnosis of the disease process in the patient consulting them. While this is easily achieved in hospital practice, it is often not possible to do so in general practice as the patient presents with non specific symptoms and little or no clinical signs.

In "The Future General Practitioner" it is noted:

> "The doctor may insist on focussing on certain aspects of the patient's problem because they are the easiest for him to handle. He will then refuse to allow the patient to tell him anything else, or refuse to hear.
>
> To obtain his greatest satisfaction, the doctor usually wants to find a patient with a serious, acute illness that has interesting features — elicited and recognised by him with great acumen — and one that responds rapidly, completely and gratefully to proper therapy."[2]

Such an approach would yield very little result in a patient who has problems with living. Furthermore, in general practice the problems of any particular patient can be seen from several perspectives. Turner and Williams noted that the approach to psychosocial disorder in general practice must be one which extends beyond the purely medical and illustrated their point with the following case history.

Case 2a

Mrs Andrews, a 50-year-old widow, gave a history of depression. During the past few months she had lost 1½ stone in weight, experienced early morning waking and a diurnal variation of mood. She described herself as feeling hopeless, miserable, spoke slowly, and moved little. She has a sister who has been hospitalised for depressive illness and has been treated with ECT.

In the above account, Mrs Andrew's problem is seen in traditional medical terms which is illness orientated and inevitably leads to the diagnosis of "depression" and treatment with psychotropic drugs or referral to a psychiatrist. However, the patient can also be seen from another perspective:

Case 2b

Mrs Andrews, a 50-year-old widow complained of feeling depressed since the death of her husband. He had been the major figure in her life, and his loss left her feeling lonely and isolated. After his death she moved to a small flat some miles away from her old neighbourhood. Although she liked the flat she found the community strange and made few social contacts. Also she had less access to public transport, so she could not easily visit old friends or her children.

The above account describes the patient's problem from a social point of view and alternative methods of management become apparent. Yet another perspective would be as follows:

Case 2c

Mrs Andrews, a 50-year-old, complained of depression, insomnia, anorexia and of feeling hopeless and worthless since the death of her husband.

Throughout the marriage her husband had been an ever present source of support for her. The family said that although he paid little attention to her frequent pleas of helplessness and her demanding behaviour, he responded actively to the more positive aspects of her personality and behaviour. After his death she began to complain to her children about how bad she felt. They responded to these complaints by visits and telephone calls, although they paid little attention to her if she did not complain.

From the above description, it is obvious that Mrs Andrew's family were reinforcing her helpless and dependent behaviour. This is the perspective from the behavioural psychologist's point of view and another form of treatment modality becomes apparent.

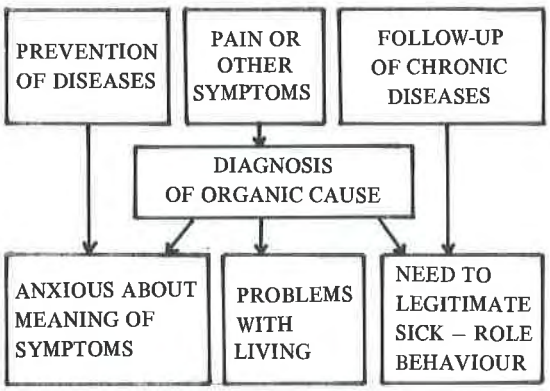
Mrs Andrew's problem can therefore be seen from three different perspectives and many others may also be relevant. With the above example, Turner and Williams have highlighted the need to consider the patient with an open mind without any preconceived notions as they felt that the most comprehensive and therapeutically useful approach to the patient is one which can encompass with it all relevant points of view. Towards this end, they proposed the "problem-oriented" approach in which a problem list is constructed from all the problems that bothered the patient, relatives or doctor. Such a problem list will include symptoms, social data, abnormal behaviour, laboratory findings and so forth. With such a list, a goal or plan of treatment can be specified for each active problem.[3]

WHY THE PATIENT CAME

Many patients see their general practitioners with a "hidden agenda". The presenting complaint is often not the primary reason for the consultation. Furthermore, as seen in the above case, the patient may have more than a medical problem.

From figure 1, it can be seen that a patient complaining of pain or other organic symptoms may at the same time be anxious about the meaning of the symptoms or have problems with living or have a need to legitimatise a sick role behaviour. Patients who came "just for a check-up" may be anxious about a particular illness.

FIGURE 1
WHY THE PATIENT CAME



It is also important to recognise the danger of patients with chronic illnesses adopting a sick-role. The advantage of being sick includes avoiding social commitments, sexual intercourse and having an apparently legitimate reason to avoid whatever is displeasing to the patient. Such sick role behaviour can quickly become a way of life.[1]

CONSULTING STYLES

In 1971, Byrne and Long conducted a study of doctors' consulting behaviour. 60 doctors from the United Kingdom together with 5 Dutch, 6 Irish, 17 New Zealand and 15 Australian doctors participated in the study. Byrne and Long found that in spite of the fact that the patient's input into the consultation contains a wide range of variables, the individual doctor's responses were standardised to a remarkable degree. They also discovered that some of the consulting styles were quite inadequate when the docotrs had to deal with non-organic illnesses.

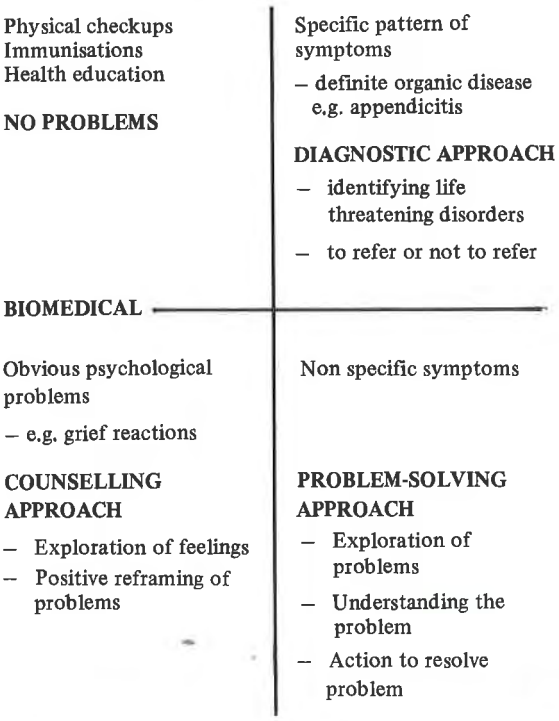
This is especially so with "doctor centred" styles in which the focus is on the collection and analysis of information. Doctors using such consulting behaviour were ineffective when faced with the patient who offers vague signs of emotional disorder and few clear answers to direct questions. Byrne and Long noted that if a doctor does not intend to cope with vague symptoms and if he fears that any sign of weakness on his part will encourage the patient to become a millstone around his neck, then he is likely to take refuge in a style that prevents emotion and feeling from entering into the consultation.[4]

Patients consulting a general practitioner can be divided into four groups:

1. Patients with no problems — e.g. patients coming for medical checkups, immunisations, and health education.
2. Patients with obvious organic problems — e.g. appendicitis, renal colic
3. Patients with nonspecific problems — e.g. vague physical complaints
4. Patients with obvious psychological problems — e.g. grief reaction

A model outlining the different consulting styles that can be adopted is proposed in figure 2. It is obvious that the general practitioner needs to be conversant with different forms of consulting techniques in order to cope with the varied kinds of problems that are encountered in general practice.

FIGURE 2



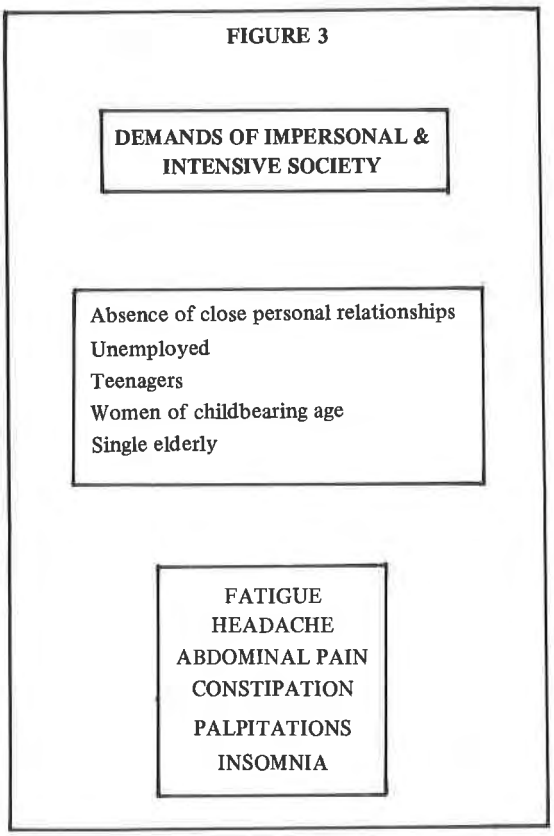
It is unfortunate that doctors tend to label patients as either having an organic problem or a functional one. The proposed model draws attention to the fact that patients can have both psychosocial as well as biomedical factors contributing to their illness.

It is important to remember that functional symptoms may precede organic disease and that every organic disease has its emotional component. Furthermore, stress reactions can mask organic symptoms and functional complaints may have no obvious preceding psychosocial problems.[5]

IDENTIFYING PATIENTS WITH PROBLEMS WITH LIVING

Figure 3 shows how the demands of an impersonal and intensive society can cause illness behaviour in particular groups of patients. Patients with no close personal relationships, the unemployed, teenagers, women of childbearing age and single elderly are at risk of having problems with living.

FIGURE 3



The main reason for not recognising psychosocial problems in patients is the failure to allow patients to express their problems or complaints in their own way. This is often the result of asking closed questions instead of open-ended ones and asking questions too early.

Case 3

A thirty-year-old female factory worker complained of giddiness, anorexia, tiredness and chest pain. A medical student was asked to take a further history from the patient and he promptly proceeded to ask the patient about other symp-

toms such as exertional dyspnoea and received only unhelped answers. The general practitioner then commented to the patient that she appeared depressed and tears slowly came to her eyes. She was reluctant to talk about her problems and was reassured that she need not talk about them if she did not want to.

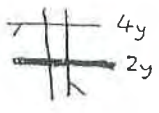
When she was asked to come back for a review she informed the general practitioner that she had an appointment to bring her son to see a child psychiatrist and she was noted to become more depressed when she talked about her son. When asked about her husband, she also became rather distressed.

Later, she agreed to be interviewed by the medical student and disclosed that her husband had left her eight years ago when she was expecting her third child. This child was her youngest son who was becoming a problem and has therefore been referred to a child psychiatrist. She has a daughter aged 15 years and another son aged 11 years. She was also staying with another man at that point of time.

THE FAMILY GRAM

The above case demonstrates the importance of creating a safe environment for a patient to share his or her emotional problems. Keith Hodgkins has described a method of recording such problems called the family gram.[6] The parents are drawn as vertical lines and children are drawn as lines across their parents with their age indicated at one end. Females are indicated by an oblique line (the "skirt") at the "foot end" of the line. The patient is indicated by a double thick line. (see figure 4)

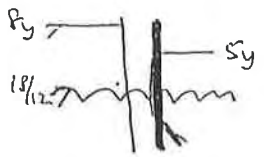
Figure 4



The patient is a 2-year-old boy who has a 4-year old sister

Adopted children are indicated by a wavy line and step-children are drawn as horizontal lines which do not cross their step-parent. (see figure 5)

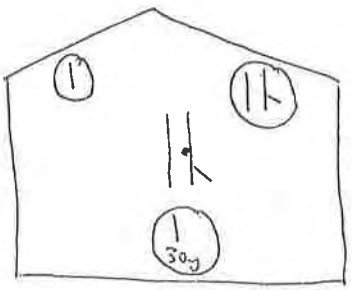
Figure 5



The patient is a woman who has an adopted daughter aged 18 months, a 5-year-old son from a previous marriage and a 8-year-old step-daughter

The roof the "house" is used to indicate the sexual areas while the walls of the "house" represents the community area, e.g. leisure, culture, religion, neighbours, etc. The left side is the male's and the right, the female. The floor of the house depicts the joint social foundations of the family, e.g. job, finance of household. Other household members can also be represented in the family gram as seen in figure 6.

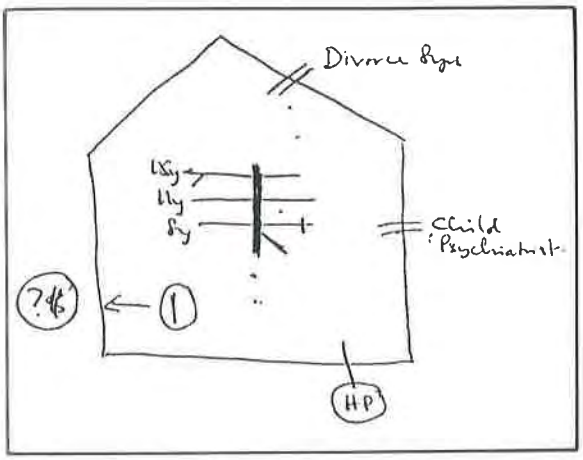
Figure 6



This household comprises the husband's father as well as the wife's parents together with a 30-year-old male lodger

Suspected stresses to the family can be indicated by arrows to the appropriate area with an explanatory label. Non-threatening or acceptable stresses are drawn as single lines across the relevant area. Overt stresses causing problems or threatening household security is depicted as a double line. Mental illness and emotional problems in family members can be indicated by a short line across the head end of the line representing that particular family member. Physical illnesses especially those that are disabling and chronic can be shown as a stroke across the foot end of the line.

The family gram of the patient in case 3 would be as follows:



CONCLUSION

Professor Prawase Wasi observed that physicians are seen increasingly as medical mechanics or even commercialised medical mechanics rather than as wise men and teachers of the people as in the past. He drew attention to the fact that health does not result only from hospitals, physicians, and medicine. It also results from a delicate interaction between man and his environment.

In his view, modern medical practitioners often neglect psychosocial factors and forget that health is mental and social well being as well as physical well being. He saw the need for a new type of physician who must be a wise man and not simply a medical mechanic. He or she must have the wisdom to see and to understand things as they are, the ability to acquire accurate and relevant information for analysis and synthesis and to solve problems and to make appropriate interventions.

Henri J M Nouwen, a teacher of pastoral theology described healing as the humble but also very demanding task of creating and offering a friendly empty space where strangers can reflect on their pain and suffering without fear, and find the confidence that makes them look for new ways right in the center of their confusion.[8]

In the midst of all the modern technological advances in medicine, we need to see healing from a more holistic perspective and to become wiser and more humane physicians.

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ORIGINAL ARTICLES

BEHAVIOURAL APPROACHES TO PSYCHIATRIC DISORDERS

Dr Ko Soo Meng, *MBBS*

INTRODUCTION

Behaviour therapy refers to psychological treatments which are based on experimental psychology and intended to change symptoms and behaviour. It can be traced to Janet's (1925) methods of re-education, which were used for disorders with a behavioural element. Behavioural therapy assumes the role of learning in the aetiology, maintenance and treatment of some psychiatric problems. Some disorders are due to the lack of learning, e.g. enuresis, some to overlearning e.g. obsessional rituals, and some loss of previous learning e.g. institutionalization. Behavioural therapy has the production of beneficial change in behaviour as the goal. The methods used may be based on Pavlovian classical conditioning (1927), Skinnerian operant conditioning (1938), learning principles, experimental psychology, or behavioural sciences in general.

The following cases illustrate the different techniques used in behavioural treatment of patients by the author at the Department of Psychological Medicine, National University Hospital.

SYSTEMATIC DESENSITIZATION

Patient A was a 32-year-old mechanic who presented with the problem of fear of traffic jam while driving. It started when he developed acute anxiety attacks whilst driving his car and being caught in a traffic jam. Since then he avoided the situation by taking a bus to work.

Mental state assessment revealed a mildly anxious gentlemen with no signs or symptoms suggestive of a physical cause for his acute anxiety attacks. He was diagnosed as suffering from a simple phobia.

A behavioural approach using Jacobson's (1938) progressive muscle relaxation exercise and systematic desensitization (Wolpe 1958) was implemented. For the latter, a hierarchy of feared situations was drawn. The patient imagined himself in each situation commencing from the least feared gradually to the most fear situation. Each stage lasted about 45 minutes. The patient carried out this programme daily at home. Subsequently, he could drive his car during the weekends but on a clear road. Finally after four months, he could drive to the clinic for his follow up appointment with the therapist during noon (the time was deliberate) when traffic was heavier.

Phobias are regarded by behaviourists as conditioned fear responses associated with avoidance behaviour. Using systematic desensitization technique, the patient undertakes some measure to reduce anxiety, followed by exposing the anxiety-free patient to the anxiety – provoking stimuli, starting with the one that produces the least fear in the hierarchy of feared situations. The stimuli may be real situations (in vivo desensitization) or visually imagined scenes (desensitization

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in imagination). This technique has been one of the most intensively investigated form of behavioural treatment, and there is little doubt about its effectiveness in phobia disorders.

FLOODING AND RESPONSIVE PREVENTION

Patient B was a 30-year-old administrative officer who presented with fear of contamination following the development of a herpetic sore on her vulva. Since then she had begun using gloves to remove her disposable underwears during her bath. She became ritualistic in her bathing which took as long as three hours. She avoided using public toilets for fear that she might contract infectious diseases from the toilet seats. She wore long pants for fear that she might accidentally touch her thighs "which may be contaminated with herpes virus" and then spread to the other parts of her body. She also had a compulsive habit of hand washing for no less than 30 minutes each time. The patient was suffering from an *obsessive compulsive neurosis.*

Using flooding as the behavioural treatment for this patient, she was brought into direct contact with the feared object, and kept there until the induced fear had been extinguished. Thus her programme involved touching her feet, thighs, abdomen, upper limbs, and then her face. She was also required to touch the toilet seat and handle toilet door knobs and taps. Each activity was followed by response prevention i.e. she was not allowed to wash her hands as she normally would. During her bath, she was not allowed to use gloves, and only a single piece of soap was used for the whole body. Previously she was using three pieces of soap for the different parts of her body during each bath.

Patient B was very motivated to recover. She finally left the hospital with much less fear of her own body. She managed to cut down her bathing time to 20 minutes and her hand washing to less than one minute.

Flooding involves exposing the patient to the phobic object in a non-graded manner with no attempt to reduce anxiety by relaxation or drugs. As with systematic desensitization, flooding can be conducted in vivo or by imagination (implosive therapy). In the initial stages, the anxiety is very high, but due to emotional exhaustion or habituation, it starts to decline gradually. Another reason for its success is the reality testing in which the patient begins to realise that the phobic object is not as fearful as he/she had expected it to be.

MODELLING

Patient C was a 38-year-old housewife who developed a phobia of glass after she had witnessed a piece of glass being thrown down from a construction work site. Although she could still eat from porcelain crockery, she tried to use plastic ones as far as possible.

Using modelling as a behavioural technique to treat her phobia, the therapist first dropped a glass cup onto the floor. He then picked up all the broken pieces and lay them on his palms. The patient did likewise. Subsequently she was able to handle broken pieces of glass with minimal fear.

Modelling refers to the acquisition of new behaviours by the process of imitation. The patient observes someone else carry out an action which he has problem with. It is often used in conjunction with other techniques like flooding and role playing for the treatment of phobia and obsessive compulsive neurosis, as well as in social skill training. It has been used successfully with phobic children, e.g. the phobic child watches other children play with dogs and is then encouraged to join in.

RELAXATION THERAPY

Patient D was a 30-year-old engineer who was referred by the neurologist for spasmodic torricollis of which investigations including CT Scan and EEG were normal.

Further history revealed that he had always been very submissive to all authority at work, and frequently accommodated to the requests of his subordinates. At home his domineering father interfered with his personal life, like deciding the

renovation plan of the patient's new matrimonial home. He was diagnosed as suffering from a *hysterical conversion disorder.*

Besides assertiveness training and role playing, the patient was also taught relaxation exercise. This helped him to move and maintain his head and neck in the normal neutral position.

Various methods of relaxation can be used so long as the patient feels comfortable with the one used. Jacobson's progressive muscle relaxation, autogenic training, breathing exercises, guided imagery and meditation are some examples. Relaxation therapy has been found to be effective in the treatment of tension headache, migraine, cardiac arrhythmias and hypertension. As a general method for reducing anxiety and tension it appears to be promising.

THOUGHT STOPPING

Patient E was a 65-year-old retired draftsman who presented with a six-month history of recurring obsessional thoughts. For instance he would repeatedly ask his children the same questions about the names of Cabinet Ministers or about events reported in the press or over the media. In the ward he would ask the same things about nurses and other patients. At night he had ruminating questions and thoughts which prevented him from initiating sleep. He realised that these thoughts were absurd and his own, but could not control them. His premorbid personality was described as obsessional and rigid. There was no significant signs or symptoms of depression or dementia. He was diagnosed as suffering from an *obsessional neurosis.*

Behaviour therapy involved thought stopping. The patient wore a few rubber bands on his writs. Whenever he had recurring self-defeating thoughts, he would snap the rubber bands. The pain caused would then interrupt the chain of maladaptive thoughts. Within one week, the patient was able to suppress self-defeating thoughts effectively by covert self-interruption without snapping of rubber bands.

Thought stopping can be therapist-directed overt interruption or client-directed covert interruption. The snapping of the rubber bands may be used as an aversive stimulus that punishes the client's self defeating thoughts or images. In addition the client may vocally or subvocally interrupt his chain of maladaptive thoughts with the word *STOP* which has an assertive quality. M J Mahoney (1974) suggested that perhaps thought substitution may be even more beneficial than thought termination alone.

BIOFEEDBACK

Patient F was a 32-year-old clerk who presented with a history of palpitations, tension headache and neckache. Physical causes were excluded by the referring physician. Mental state examination revealed a tensed and anxious gentleman. Initial treatment for *anxiety neurosis* with anxiolytics, beta-blocker and muscle relaxation exercises brought temporary relief. The symptoms recurred after he was given intravenous glucose by a Chinese physician. As he was not responding to previous treatment, biofeedback training was planned for him. Electronic instruments were used to monitor small and otherwise undetectable changes in the biological state of the patient and were audibly and visually fedback to him. Through trial and error, he attempted relaxation exercises that could alter and control certain autonomic functions. His tension headache, neckache and palpitations improved.

Biofeedback has been used to treat patients with cardiac arrhythmias, hypertension, tension headache, migraine, tics and spasm, feacal incontinence, and anxiety neurosis. Electro-encephalographic (EEG) feedback has been tried in patients with insomnia and some forms of epilepsy, and biofeedback of blood alcohol levels in the treatment of alcoholism.

STAR-CHART AS REINFORCEMENT

Patient G was a 12-year-old girl with the problem of *primary enuresis.* Her elder brother also had a similar history but was dry by the age of 10. Patient felt embarrassed by her condition. No significant psychopathology in the family was elicited.

Her mother brought her for treatment as she was going to a secondary school soon.

Physical examination and laboratory investigations including renal function test and urinalysis were normal. A behavioural approach using a star chart was prescribed. For every dry night, she was given a star. With three consecutive dry nights she was rewarded with a piece of stationery as requested by her. For every five dry nights in a week she could visit the zoo or bird park. When she was dry throughout the week, a soft-toy was given. The parents were advised to praise her whenever she was dry. Within a month she was dry at least five nights a week.

Any event or stimulus consequence that increases the strength or probability of the behaviour that it follows is called a reinforcer (Hall 1971). Reinforcement should immediately follow the desired behaviour for it to be effective. Whenever possible, the reinforcement should be social e.g. smiles, praises.

TOKEN ECONOMY

Patient H is a 17-year-old teenager who suffered from epilepsy with mild *mental retardation* as a consequence of a viral encephalitis five years ago. He could not continue his education in the normal school and as such stayed at home with his mother. She was running a business at home while father worked in his own firm. His younger brother was in primary 5 in a normal school. Patient felt bored at home and started showing behavioural problems like slapping and punching himself, throwing himself onto the floor and self-induced vomiting whenever he could not get immediate attention from his parents.

Besides being on anti-convulsant for his epilepsy, a behavioural programme with tokens as rewards for appropriate behaviours was implemented. For example, whenever he could take his meals without hitting himself, he was praised and given token chips. Desired behaviours were specified and tokens given for emission of such behaviours. Accumulated tokens obtained for the day were exchanged for certain privileges like parents' visit, outing with parents, a car ride, or home leave.

An important consideration is the maintenance of desired behaviour after the patient is discharged. Attempts to sustain improvement have been made by gradually replacing tokens with social reinforcement. In this way, it is hoped that generalization to patient's own environment is achieved. Needless to say co-operation from the family who may act as co-therapist is of vital importance.

SOCIAL SKILLS TRAINING

Patient J was a 31-year-old gentleman who had been suffering from *schizophrenia with depression* for the past five years. He was admitted in a depressed state with persecutory delusion and auditory hallucination. He responded well to anti-psychotic drug treatment. He had been unemployed since his illness. Even when he was in remission, he was socially inadequate and stayed at home most of the time.

A social skill training programme was planned with him. This included personal grooming; initiating, maintaining and terminating social contact; modelling, rehearsing and role-playing, and finally video feedback. The patient role played a job interview which was videotaped and shown to him. Attention was drawn to details like eye contact, voice volume and body language. After discharge he was placed in a sheltered workshop and subsequently secured a job in a computer firm.

Social skills include verbal and non-verbal behaviours which are adaptive to the social environment. They can be taught to those who lack them. Social skills training has been used successfully in institutionalized schizophrenics, depressives, psychopaths and the mentally retarded. Although it does not play a direct therapeutic role like drugs in terms of cure for the illness, it does play an important role in the overall management of the patient, in enhancing a better quality of life during rehabilitation.

DISCUSSION

Relative to psychodynamic psychotherapy, behaviour therapy focuses on maladaptive behaviour itself rather than on some presumed underlying cause or unconscious conflict. It concentrates on the here and

now, and assumes that such behaviour is, to a considerable degree, acquired through learning, the same way that any behaviour is learned. As such, it also assumes that psychological principles (especially learning principles) can be effective in modifying the maladaptive behaviour which is self-defeating and/or interferes in some way with the welfare of others. Specification of "target behaviours" to be modified and what they should be replaced by should be determined by discussion of the behavioural analysis with the patient. The treatment needs to be individually tailored and modified according to his progress. Flexibility, creativity, and ingenuity may be required to devise and implement appropriate learning procedures.

Issac Marks (1976) estimated that as many as ten percent of adult psychiatric patients are suitable for behaviour therapy. As the layman becomes more aware of the adverse effects of pharmacological treatment, he would like to help himself and seek other alternative methods of treatment. The behaviour therapist's role is more that of an instructor and the patient a potential student. It is the latter's responsibility to choose whether he wants to try to learn the new and desired behaviour. Ultimately he has to understand that this is under his *own-control.* Behaviour therapy has been used to treat phobias, obsessions, compulsions, sexual problems, weight disorders, alcoholism, smoking, stuttering, drug abuse, interpersonal problems, and in crisis intervention, marital therapy, family therapy, group therapy, social work and the rehabilitation of mentally retarded or chronic institutionalized patients. The list is by no means exhaustive.

Within the confines of this article, it is not possible to examine all the behavioural techniques employed in the practice of modern psychiatry. The author can only attempt to illustrate the general problem solving approach and the basic principles common to such techniques with case reports. It is hoped that doctors and patients will become more aware that such techniques are available for the management of psychiatric disorders besides conventional pharmacological therapy and classical psychodynamic psychotherapy.

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ORIGINAL ARTICLES

TREATMENT OF PALMAR HYPERHYDROSIS WITH HYPNOSIS – A CASE REPORT

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INTRODUCTION

Chronic severe palmar hyperhidrosis can be a source of much social embarrassment, causing many sufferers to become socially withdrawn. It can also cause such inconvenience as to interfere with certain occupations and the pursuit of certain forms of recreation.

In this paper, a case of severe chronic palmar hyperhidrosis is described, together with the treatment protocol using hypnosis as the sole means of therapy. This case was followed up for over 12 years. A discussion follows.

DESCRIPTION OF CASE

NLC is a male Chinese who consulted the author at the age of 21 years in December 1975. He complained that over the previous 4 to 5 years, he had severe excessive sweating of his palms which he described as cold and literally dripping. Thus he felt embarrassed to meet people, especially to shake hands. Whenever he went out, he would have 3 or 4 handkerchiefs with him to dry his palms, and these would all become wet in the course of the day. He worked as a shipping clerk, and his work was made all that more difficult with the sweat getting on to the stationery and ink.

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He was obviously anxious and tensed when seen, with his palms literally dripping wet and cold. As far as could be assessed, there were no known problems in his life causing him anxiety, though he confided that he wished he could get a better paid job. Pulse rate was 58/min., regular, blood pressure 120/70 mm.Hg. Treatment with Bellergal and chlordiazepoxide only afforded partial and temporary relief. He said his palms sweated more when he was "moody" and when he was anxious, though he slept well.

He asked about other treatment alternatives as he had been variously treated without satisfactory results. I explained that upper dorsal sympathectomy could bring lasting relief, but he was not keen on surgery. It was then that hypnotherapy was suggested which he accepted.

The first session started on 27 Jan 1976. Induction was by eye fixation and distraction, and hypnotic trance deepened by progressive relaxation. He was able to achieve catalepsy, and the words "calm" and "relax" were associated with the deepening process.

Under hypnosis, the role of the autonomic system in the control of sudomotor activity was explained, and how anxiety and worry can upset the fine balance in autonomic activity, and hence palmar sweating. Progressive relaxation under hypnosis was linked to a sensation of calmness, quiet and serenity in the mind. It was also suggested that this relaxation would cause a return to normality of auto-

nomic activity, thus causing the palm to become dry. It was noticed that his palms became dry while under hypnosis. He was taught self-hypnosis and instructed to go home and practice this daily.

On 5 Feb 1976, he reported good progress with self-hypnosis and improvement of the palmar hyperhydrosis. He was taught to go deeper into hypnotic trance and deeper relaxation which he achieved without any trouble. Again, relaxation was coupled with a sense of calm with its beneficial normalising effect on the autonomic nervous system, leading to drying of his palms. John Hartland's ego-strengthening method[1] was used to help build confidence in himself and in meeting with other people. He was instructed to continue to practice self-hypnosis and given an appointment to see the author a week later.

On 13 Feb 1976, he reported dry palms with a sense of elation, but complained that his palms still felt cold at times. Ego-strengthening was reinforced, and anti-anxiety suggestions and suggestion of warmth in his palms were coupled with further relaxation and deepening techniques, and he was discharged after this third hypnosis treatment with instructions to keep up with self-hypnosis.

On 22 Feb 1977 (a year later), he reported that he had dry hands throughout the whole period since he was given hypnotherapy though he had stopped practising self-hypnosis out of sheer laziness, and also because his palms had been dry.

On 13 Aug 1979, he reported dry palms, and that he practiced self-hypnosis once in a while, especially when he was "moody". The author noted the dry palms on his numerous other visits, the last on 12 July 1988, more than 12 years after he first received hypnotherapy. He was proud to present his wife (whom he married in 1977, more than a year after treatment) and had his two children consult the author also. When interviewed, his wife said she had never known that he ever had wet palms. He said that he practiced self-hypnosis once in a while when his heart was heavy, and also to release tension, but not for the treatment of wet palms since this problem has not recurred.

DISCUSSION

In spite of its benign condition, chronic severe palmar hyperhydrosis often causes the sufferer much embarrassment in his social intercourse, and this results in much anxiety which further aggravates the condition, thus completing the cycle. The social and psychological problems it causes thus cannot be overestimated.

Medical therapy has largely been disappointing. Anti-cholinergic drugs are not selective and may produce hot flushes, dry mouth, blurred vision, constipation and urinary retention. Sedatives and anti-perspirant creams have largely been disappointing. Allergic contact dermatitis have often been associated with formaldehyde soaks; gluteraldehyde soaks are associated with hyperpigmentation; whilst aluminium chloride is rarely effective.

Iontophoresis, though effective, has only a temporary effect and needs to be maintained. Behavioural therapy with or without biofeedback[2] is aimed at increasing the patient's ability to relax to reduce his sweat response. The results were again largely unsatisfactory.

Sweat glands are activated by cholinergic fibres of the sympathetic nervous system, and cease to function when deprived of their nerve supply. Hence, selective sympathetic denervation appears to be the obvious answer. However, this could result in permanently dry, flushed skin with its attendant problems, though patients often find these more tolerable that having wet and cold palms. There have also been reports of post-surgical relapses.

Conlon and Keaveny[3] performed a series of upper dorsal sympathectomies on 75 patients, using a supraclavicular approach, preserving the stellate ganglion. The period of post-operative review was from 2 months to 7 years with a mean of 6 months. 71 cases (94.6%) "were completely satisfied with the results"; 2 had residual sweating along the ulnar border of the

palm (explained by the presence of the inconsistent nerve of Kuntz which forms an alternative pathway for sympathetic fibres to the ulnar nerve); 1 required a second operation which was successful; the last patient was found to have an underlying psychiatric complaint (emphasising the importance of preoperative psychiatric assessment).

More importantly, there were 14 (10.3%) post-operative complications, enumerated as follows:

3 pneumothoraces

1 chylothorax

1 wound infection

9 (6.6%) Horner's Syndrome, 2 (1.4%) of which were permanent and 7 resolved completely in 2 weeks.

Thus, whilst their results are encouraging, in their own words: "Despite its distressing nature, primary palmar hyperhidrosis is a benign condition; surgery should be recommended after the failure of conservative measures."

The influence of higher brain centres on autonomic activity is well-known, but what is less known is why certain target sites are more affected via this pathway than others. For example, autonomic stimulation by anxiety may produce in one person palpitations; in another gastro-intestinal symptoms; yet in another, palmar hyperhydrosis; and so on. Hence, it appears logical to manage palmar hyperhydrosis at the cortical level by reducing anxiety, or else to block the transmission of unwanted impulses from the cortex to the autonomic centres. However, this cannot be the whole picture since anxiolytics are only partially effective or largely ineffective in this condition.

It is not properly understood how hypnosis works in relieving palmar hyperhydrosis. Since it appears to selectively block sympathetic activity to palmar eccrine glands, it is probable, therefore, that hypnosis does not work by being purely anxiolytic. Thus, its exact mode of action at this point of our understanding can only be speculative.

Whilst upper dorsal sympathectomy causes practically the total abolition of palmar sweating, resulting in a permanently dry, flushed skin, treatment by hypnosis leaves the eccrine innervation intact and hence normal sweating of the palms is preserved. Hypnosis thus should be seriously considered as a treatment modality in severe chronic palmar hyperhydrosis before upper dorsal sympthectomy. However, its success requires physician training in hypnosis and a highly motivated patient.

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ORIGINAL ARTICLES

THE PREVENTION OF OCCUPATIONAL SKIN DISEASES

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INTRODUCTION

Occupational skin disease has been described as the commonest occupational disease by the World Health Organization. However, the majority of cases are unnecessary events, representing a failure of preventive mechanisms in the workplace. Occupational dermatoses are eminently preventable, and some of the measures which can be taken to minimise their occurrence are described below.

SOME STRATEGIES FOR PREVENTION

Removal of Offending Agent

Removal of the offending agent responsible for the occupational dermatitis remains the first principle of prevention. One example of how this can be done is the addition of ferrous sulphate in cement to convert the hexavalent chromate, which is a common allergen in Singapore, to its insoluble trivalent form, which is not allergenic. Iron sulphate has been added into cements manufactured in Sweden and Denmark since the early 1980s. Singapore should follow likewise.[1] Another example is the removal of swarf, which can cause abrasions and microtrauma to the skin, from mineral oils.

Substitution with safer alternatives

If the offending agent cannot be removed, then substitution with a safer alternative might be another measure which can be taken. An example of substitution is the use of high molecular weight epoxy resin (which is less sensitising) instead of the low molecular weight ones, which are more sensitising.[2] On substitution with safer alternatives: Studies have shown that substitution of low molecular weight epoxy resin with higher molecular weight resin was impractical and the idea was abandoned. This is because high molecular weight epoxy resins are more viscous and not as "malleable". The substitution of plant derived turpentine with mineral turpentine was a very good example. The allergen turpentine, a commonly used solvent, can also be substituted with white spirit.

Design and Engineering Controls

Design and engineering control of work processes such as the enclosure and automation of processes, proper machine design with hoods, splash guards, and drip pans to prevent splashing, are also helpful in minimising human skin contact with irritants and allergens, and thus prevent occupational skin disease. This is a major factor in prevention, because over 90% of occupational dermatoses are contact dermatitis.[3]

Well ventilated work environment and good housekeeping

Workplaces are legally required to have adequate ventilation in order to remove any noxious fumes or dusts.[4] From the point of view of occupational dermatoses, a well ventilated workplace is desired if the work involves the handling of volatile solvents, irritant dusts and irritant fibres such as fibreglass.

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Conditions of extremely low or high humidity may also cause or aggravate skin disease. The clinical entity of low-humidity dermatoses has been described,[5] and high humidity can aggravate the skin of workers with heat rashes and intertriginous dermatoses.

Adequate washing and drying facilities

Proper washing and drying facilities can contribute significantly to the prevention of occupational skin disease. What is meant by adequate washing facilities depends on how damaging the work process is to the skin, and the number of workers present. As a guide, about one washbasin is needed for every ten workers.[4]

Drying facilities are another important requirement. This can take the form of disposable paper sheets, or rolled down cloth towels, which are to be preferred over hot air dryers, which can be dessicating to the skin if used repeatedly. Time for cleansing of the skin should be taken from the regular working hours, and not during the worker's own off time.

Soaps, detergents and waterless cleansers

The choice of an appropriate skin cleanser at work depends on several factors, such as the type of work, the dirt encountered, and its solubility.

Soaps and detergents act as surfactants to facilitate surface wetting and removal of dirt. It may, however, have additives such as perfumes and germicidals which may sensitise the worker's skin. Soaps and detergents can also be irritant at high concentrations.

Waterless cleansers are usually solvent based, and thus have defatting and irritant properties. If available, non-ionic detergents are preferable, as these are less damaging to the skin.

Abrasive cleansers can be either vegetable based e.g. cornmeal or sawdust, mineral based, or pumice. The vegetable based abrasives are generally preferable to the harsher mineral based cleansers.

Soaps, detergent and cleansers have to be correctly and appropriately used, or it may cause more skin disease than it prevents.[6] It is unfortunate that in general, the more effective a cleanser is, the more damaging it is to the skin. Thus, the choice of cleanser should balance its cleansing effectiveness against its potential to damage the skin.

Health education of workers

Health education is another thrust in the multi-pronged approach to the prevention of occupational skin disease. The worker who is in contact with toxic agents should be made aware of its hazards and its potential for skin damage Proper material handling techniques, and the use of mechanical aids in operations (e.g. tongs, brushes) should be taught.

The worker should additionally be drilled in the importance of good personal hygiene, and how to recognise and seek early treatment for skin disease.

Pre-employment and pre-placement medical examinations

In the pre-employment and pre-placement medical examinations, a history of skin disease, and also atopy should be enquired for. Atopics are at high risk of contracting occupational skin disease. A previous questionnaire study of workers compensated for occupational dermatoses had found that atopic eczema are 13.5 times more likely to have occupational dermatoses as compared to non-atopics.[7]

Persons with a history of allergies to known substances (e.g. nickel) should avoid contact with these allergens, while those with chronic hand eczema should avoid irritants to hands at work. Ichthyosis is another predisposing factor to occupational skin disease, and sufferers should avoid contact with irritants, or marked changes in humidity or temperature.

Because of the possibility of the Koebner phenomenon it is advisable that persons with psoriasis and lichen planus should avoid work which is likely to cause repeated trauma. Persons with chronic milaria and intertriginous inflammatory

skin disease may have their conditions aggravated by work in hot and dusty environments.

Nursing and first aid at work

An industrial nurse who is knowledgeable of work hazards and alert to possibility of occupational dermatoses is a tremendous asset in the campaign to prevent occupational skin disease. The nurse's role can include the early reporting of cases to the physician and treatment of minor abrasions to prevent its progression to full blown occupational dermatoses. Damaged skin may also make it easier for sensitisation to workplace allergens to occur.

The awareness of sensitising medication (e.g. acriflavines, benzocaine and other "caine" local anaesthetics, mercurials, penicillin) which may result in dermatitis medicamentosa and its avoidance as topical skin applications should also be imparted to the industrial nurse. In a recent report from Singapore, 6.4% of 1873 patch tested individuals were found to have a positive reaction to proflavin, 5.2% had a reaction to neomycin, and 1.4% gave a positive reaction to a "caine" mix.[8]

Protective equipment

Protective equipment for the skin includes finger cots, and gloves. It should be noted that different glove materials have varying breakthrough and permeation rates and should therefore be used for different purposes.[9]

Impervious gloves worn constantly may cause maceration, skin damage and predispose to skin irritation; and soaked fabric lined gloves may act as a poultice. Furthermore, it should be remembered that leather gloves may have sensitising chromates, and that the antioxidants and/or accelerators in rubber gloves may also act as sensitisers. Sleeves, aprons, footwear, face shields are other forms of protective equipment which may be useful.

It is essential that protective equipment be regularly cleaned and properly maintained. Damaged or torn equipment should be immediately replaced.

Barrier creams

Several types of barrier creams are commercially available, for example, broad spectrum creams (which may have irritant surface active agents) or chemical neutralising creams (e.g. chelators for chromates, and nickel). However, the current view of many occupational health practitioners is that these barrier creams do not work, and may instead provide the worker with a false sense of security.

Surveillance and investigation of outbreaks

A constant surveillance of the occupational health situation of the workplace is to be encouraged. Outbreaks or unusual clusters of occupational skin disease should be promptly investigated, and the appropriate corrective measures taken. It is also a statutory requirement to notify the Ministry of Labour of all such cases of industrial dermatitis. The main purpose is for proper investigations to be conducted by the Ministry, and for subsequent preventive measures to be taken so as to prevent further skin disease among other workers.

Legislation

Currently in Singapore, there are statutory requirements for employers to practise the above measures for the prevention of occupational skin disease.[4] One of the main objectives of the law is to protect workers from contracting occupational disease. The law is enforced by the Ministry of Labour, and there are specified penalties for breach of these statutory duties.

CONCLUSION

Several strategies have been outlined in the prevention of skin disease. These measures can be practical and cost effective, and if implemented, it is likely that the occurrence of occupational dermatoses would greatly diminish.

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ORIGINAL ARTICLES

PLASTIC AND RECONSTRUCTIVE SURGERY

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INTRODUCTION

The speciality of plastic surgery has been regarded by many as the most 'general' of all the surgical disciplines. By this is implied that the basis of plastic surgical practice is a broad understanding of general surgical principles and a basic grasp of its relationship to surgery in general. When a young plastic surgery trainee is being taught the principles of wound care, wound healing and atraumatic techniques in the handling of wounds, he is really being given the grounding in the basic tenets of all surgical practice. Perhaps, every surgical trainee should undergo this regime of training as a preliminary step in his surgical curriculum.

The horizons of plastic surgery are rapidly expanding, as opposed to certain surgical disciplines which are evidently contracting in their scope and application. The reason for this growth may be due in part to the nature of the discipline itself with its emphasis on perfection and the lure of excellence. There is a constant need to develop new and sophisticated techniques to cope with the defects of nature, the ravages of cancer and the destruction and distortion caused by trauma. The challenge for innovation and creative ideas in reconstruction remains the main motivating force of the specialty and contributes to the vitality of the discipline.

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HISTORY

The earliest written records of plastic surgery go back into antiquity. Celsus (25 BC – 50 AD) described operations to correct congenital malformations and to repair mutilations of the nose and ear in his book "Chirurgia Cutoris". Sushruta, an Indian surgeon, first described operations to reconstruct noses. It was common practice during those days (700 – 600 BC) in India for criminals to have their noses amputated. This method of nasal reconstruction is nowadays known as the Indian rhinoplasty.

The term plastic is derived from the greek word 'plasticos' which means to mould or shape. It has nothing to do with the use of modern plastic materials or foreign implants.

'Modern' plastic surgery as we know it today really began between the 1st and 2nd world wars. The victims of the war with burns or gunshot injuries of the face, limb injuries which required reconstruction provided the necessary impetus for the development of the speciality. With the advent of peace time and relative prosperity, the branch of plastic surgery known as cosmetic surgery came into its own. In fact, the public tends to view plastic surgery as synonymous with cosmetic surgery. This is not true of course because the vast amount of work in our Department is reconstructive rather than purely for cosmesis.

PRESENT SCOPE OF PLASTIC SURGERY

In the Department, we handle a great volume of both emergency and elective cases. We see about 5000 new patients per year and over 17000 cases in our specialist outpatient clinics. The Unit is on 24-hour

emergency call for all the burns, facial and soft tissue injuries that are referred to the Singapore General Hospital. In addition, we help to handle emergency hand trauma workload as well.

ELECTIVE CASES

What are the elective cases that are seen? They mainly fall into the following broad categories.

I Congenital Deformities

Cleft lip and palate, cranio-facial defects such as Aperts and Crouzon's, microtias and other ear deformities, haemangiomas, all types of hairy pigmented naevi, Lymphangiomas, hypospadias, congenital ptosis and other eyelid defects.

II Benign/Malignant Skin Conditions

The benign skin lesions (intradermal naevi, sebaceous cysts, syringomas, dermatofibromas, etc) form the bulk of our day surgery or LA cases.

Malignant skin conditions such as basal cell carcinoma, squamous cell carcinoma, malignant melanoma, etc are mainly referred to our Department to handle, especially when these occur on the face because of the need for cosmetic repair and reconstruction. Skin cancers are increasing in incidence in Singapore and in the period 1975-1984, we saw a total of 408 cases in the Department.

III Post-traumatic Scars/Keloids

The Department is referred to manage a variety of scars. They are mainly post-traumatic due to burns or road traffic accident but they can sometimes be iatrogenic following surgery. Our population is very susceptible to hypertrophic scars and keloids. The Department holds two clinics a week merely to handle these cases. The mainstay in the management of hypertrophic scars/keloids is the use of pressure therapy and local steroids. Surgical excision is not routinely performed except under special circumstances. Ordinary post-traumatic scars on the face may be revised by a variety of techniques such as dermabrasion, Z'plasty or simple excision and careful re-suturing.

IV Facial/Maxillo-facial Surgery

When facial injuries occur, they may involve only soft tissues of the face or the underlying skeleton. Road traffic accidents usually result in a combination of soft tissue injuries (lacerations, etc) and fractures of the facial skeleton. Maxillo-facial injuries are usually jointly managed by the plastic surgeon and the dental surgeons if fractures involve the mandible. Soft tissue injuries involving important structures such as the lacrimal apparatus, the salivary duct, the facial nerve may require microsurgical repair and are normally referred to our Department.

V Head and Neck Cancer Surgery

Following ablative surgery for head and neck cancer, two problems arise. First is a disturbance of function and secondly is a cosmetic defect. Reconstruction following ablative cancer surgery in the head/neck region is now carried out as a primary procedure rather than as a delayed procedure. This reduces both the morbidity as well as the mortality in these patients. In intra-oral cancers, the advent of free tissue transfer by microvascular surgery has ushered in a new era in the management of these difficult cancers.

VI Breast Reconstruction following Mastectomy

More and more women who have had mastectomy, especially those in the younger age groups are requesting for reconstruction. This is understandable since it has been conclusively proven that reconstruction does not affect the prognosis or course of the disease. Since Mastectomy is such a mutilating procedure for a woman, the knowledge that reconstruction is possible has alleviated a lot of their anguish and helped them in their rehabilitation following surgery.

The new techniques available for reconstruction using the patient's own tissue rather than using silastic implants have also given breast reconstruction a boost. There are less problems than with implants and the cosmetic results using autogenous tissue are equal if not superior to those of foreign implants.

RECENT DEVELOPMENTS IN PLASTIC SURGERY

1 Laser Surgery

Laser is an acronym for Light Amplification by the Stimulated Emission of Radiation. Its application in medicine and particularly in plastic surgery has given plastic surgeons a new modality for treatment of haemangiomas, tattoos and other cutaneous lesions. The most commonly used laser in our Department is the CO_2-laser which is a 'cutting' or surgical laser. The argon laser is more specifically used for coagulation of small vessels and therefore finds its optimum usage in haemangiomas. Biostimulative Helium-Neon lasers are used to promote wound healing and have been found to be effective in treatment of chronic ulcers. The advantages of the use of laser over other conventional surgical methods are (1) reduced blood loss (2) speed of operation especially when multiple skin lesions are vaporised (3) minimal dressings required after the procedure (4) palliation for certain cancers not amenable to conventional surgical methods.

2 Microvascular Surgery

Although microsurgery i.e. the use of magnification to enhance the results of precision surgery has been in use for almost 5 decades, the advent of microvascular surgery is more recent. This technique involves the re-anastomosis of small vessels of about 1 mm calibre, previously not possible under the naked eye. The success of microvascualr anastomosis meant that it was possible to salvage severed limbs, amputated digits, ears and even the penis. It also meant that we can now remove composite tissues comprising skin, muscle and bone from one part of the body and transfer them to another distant site for purposes of reconstructing defects left by cancer ablation or traumatic loss.

The Department did the first successful microvascular flap transfer in 1978 and since then, it has become an established technique used routinely as one of the standard methods of reconstruction. All our registrars have to spend time in the experimental microvascular laboratory at the beginning of their training to become competent in this technique.

3 Cranio-facial Surgery

Cranio-facial surgery is an exciting and challenging new area of advance in plastic surgery. It ventures into the area of the skull base where few dared to enter before. But with the combined team approach involving the neurosurgeon, we are now able to deal with such congenital conditions as Aperts or Crouzon's disease where the eyes are displaced laterally and the patients look grotesque. These children have essentially a normal IQ but because of their appearance, they were confined to mental institutions. Now craniofacial surgery involving major shifts of the orbit, skull and facial skeleton have made them look more human and therefore more socially acceptable as individuals. This is a startling surgical contribution. The spinoffs from this form of surgery are that we can now cope more readily with head/neck cancers which involve the skull base and also the more complex cranio-facial injuries.

4 Liposuction and Body Contouring

Liposuction or vacuum-assisted suction of fat from the body is a new technique which was developed by a French plastic surgeon about a decade ago. It is used to reshape and contour the body, often with dramatic results. But liposuction is not a procedure to be taken lightly because complications can occur and it is certainly not a panacea for over-indulgence and obesity.

5 Skin Culture

The ultimate solution in the restoration of skin loss must be in skin culture. This means that a small 1 sq cm of skin can be harvested and this is cultured in the laboratory so that it grows to several thousand times its surface area and in a reasonable period of time. This concept has been translated into reality in a handful of burns centres in the world. It is in the forefront of biotechnological research. We are hoping that we can start such a skin culture laboratory here to complement what has been done already in our skin Transplant Programme. Although skin

culture is still in its infancy, it holds great promise for the future management of severe burns and other forms of extensive skin loss from the body.

6 Tissue Expansion

This technique of expanding skin and subcutaneous tissue employs the physiological principle of stretch and 'creep', not unlike the changes in the abdominal wall during pregnancy. The expanded skin can of course be used for reconstruction and the correction of scars in difficult areas such as the face and limbs. The principle of skin expansion is now being extended to other tissues such as nerves and we may not need to do nerve grafts in the future.

CONCLUSION

Due to rapid expansion and scope of plastic surgery, it is inevitable that subspecialisation withini the discipline will occur. Already Hand Surgery has been established as a separate unit in the Singapore General Hospital. Will subspecialisation lead to a fragmentation of the specialty and perhaps a loss of identity of the discipline? I do not think so. Plastic Surgery was born out of a need to cope with the changing demands and challenges of surgical practice. It is a dynamic discipline which is constantly changing its boundaries, bringing in new technology and developing new techniques and refining what we already know about the pathology of wound healing and transplantation biology. We have always one aim in mind and that is to try and achieve perfection and excellence in our attempts to repair and reconstruct the human body. In his theological assessment of the value of plastic surgery, Pope Pius XII had this to say:

> *"If we consider physical beauty in its christian light and if we respect the conditions set by our moral teachings, then aesthetic surgery is not in contradiction to the will of God, in that it restores the perfection of that greatest work of creation, MAN."*

ORIGINAL ARTICLES

THE MANAGEMENT OF COLONOSCOPY-RELATED PERFORATIONS OF THE LARGE BOWEL

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SUMMARY

The authors reviewed 4 patients who suffered perforation whilst undergoing colonoscopy at the National University Hospital. The diagnosis, management and outcome of these patients are discussed in the paper. We also emphasize the need for an early laparotomy in these cases though the prognosis in elderly patients with pre-existing medical problems is guarded.

INTRODUCTION

Perforation of the large bowel during colonoscopy is a well recognised though uncommon complication.[1] The incidence of such a complication is between 0.2 to 2.0%.[2-3] However, there has been only a few papers[2-8] which have dealt with the management of endoscopic related perforations and there has been divided opinions as to the management of colonscopic-related perforations. Adair and Hishon[4] in their series concluded that when signs of peritonism in such patients are absent, a conservative approach can be adopted. They believe that when colonoscopic-related peforations do happen, it is both likely to be small and occurs in a cleaner bowel. In addition, Degeromej reported a patient who had a colonoscopic perforation discovered late and was treated conservatively.[6]

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However, in a recent series, Thorbjarnarson described 8 patients who suffered such a complication over a 10-year period and all had early surgery and recovered with little morbidity.[8]

We describe 4 patients who suffered colonoscopic related perforations at the National University Hospital (NUH), Singapore, and discuss some of the factors pre-disposing to perforation and their surgical management.

METHODS AND MATERIALS

From 24 June 1985 to 30 June 1988, a total of 775 colonoscopic examinations were performed at N.U.H. Of these, 4 patients suffered perforations and were referred to the Department of Surgery for management.

Once a patient is suspected to have sustained a perforation he is managed as follows:

1. He is placed on high dosage antibiotics using Ampicillin, Flagyl and Gentamicin.
2. Oral feeds are discontinued, intravenous fluids started and the patient prepared for surgery.
3. The principles of surgery would be to:
   a. clean the peritoneal cavity by extensive lavage.
   b. attempt primary repair if the faecal soiling is minimal.
   c. do a defunctioning colostomy if the soiling is significant.

d. post-operatively, they are treated with intravenous fluids and antibiotics, and carefully monitored.

4. The outcome after surgery is carefully assessed.

RESULTS

1. Age/Sex Distribution

In our series, there were 4 patients whose ages range from 39 to 85 years of age (2 males and 2 females) (Table 1).

2. Indications for Colonoscopy

One had a routine endoscopy as he belonged to the high risk cancer groups whilst another two were being investigated for bloody diarrhoea. One was to have polypectomy done, polyps previously diagnosed on Barium Enema.

3. Diagnosis of the Perforation

In one of the patients, the perforation was diagnosed when the endoscopist realised that he was able to visualise bowel through the scope. 3 patients either complained of acute abdominal pain or of a feeling of being distended. In these patients abdominal tenderness and guarding was elicited on careful examination (Table 1). Also, 3 of the 4 patients had evidence of gas under the diaphragm radiologically.

4. Time Interval to Surgery and The Degree of Soiling

The mean time interval to surgery was 5 hours (range 2 to 10 hours) as shown in table 2. At laparotomy, the size of the perforation varied from 0.5-3.0 cm which indicates that the injury caused could be larger than the diameter of the colonoscope. All had the large bowel prepared by the use of Polyethylene glycol (PEG).

The amount of soiling found varied from minimal to moderate, this being dependent on the interval to surgery, size of bowel perforation and how well the bowel is prepared for the endoscopy (Table 2).

6. Surgical Procedures

As mentioned earlier, the surgery done depends on the degree of soiling; only one of the patients had primary repair of the perforated segment of bowel, whilst two had segmental resection and the remaining one had a defunctioning colostomy done.

7. Morbidity and Mortality

In our series, 2 of the patients survived and recovered with little post-operative complications. Their average hospital stay was 7 days. However, the remaining 2 died post-operatively from multiple medical illnesses such as acute renal failure, stroke, acute myocardial infarction and bronchopneumonia. We feel that these patients already had severe pre-existing medical illness which was further exacerbated by a sources of sepsis from the perforated bowel and these patients were all elderly ($>$ 75 years).

TABLE 1: CLINICAL FEATURES & PATIENTS

Patient No.	Age/ Sex	Indication for Scope	Site of Perforation	Contributing Factors	Gas under Diaphragm
1	39/F	Polypectomy after polyps seen on Barium enema	Sigmoid colon	Polypectomy done	Yes
2	54/M	Cancer Surveillance	Sigmoid colon	Difficult manoeuvre	No
3	77/M	Bloody diarrhoea	Recto-Sigmoid junction	? unknown	Yes
4	85/F	Bloody diarrhoea and Fe deficiency anaemia	Recto-sigmoid junction	Struggling patient	Yes

TABLE 2: FINDINGS AT LAPAROTOMY AND EVENTUAL OUTCOME

Patient No.	Interval to Surgery	Bowel Prep Used	Findings at Operation	Procedure Done	Outcome
1	4 hr 30 min	PEG	1. Minimal faecal soiling 2. 0.75 cm perforation 3. Polyp seen	Segmental resection	Discharged on 8th POD
2	2 hr	PEG	1. Minimal faecal soiling 2. 0.5 cm perforation 3. Normal bowel	Primary repair	Discharged on 7th POD
3	10 hrs	PEG	1. Faecal soiling of peritoneal cavity 2. 1 cm perforation 3. Polyps removed	Sigmoid colostomy	Recent AMI and Cerebrovascular accident before endoscopy. DEATH due to broncho-pneumonia at 33rd POD
4	2 hr 30 min	PEG	1. Minimal soiling 2. 3 cm perforation 3. Normal bowel	Segmental resection	Known chronic renal failure. Acute Myocardial Infarct at 7th POD. DEATH due to renal failure at 23rd POD

POD — post operative day
AMI — Acute Myocardial Infarct

DISCUSSION

The advent of newer and more sophiscated colonoscopy equipment has resulted in its widespread use for any symptom referable to the large bowel. This means that the complications of the procedure will be seen with greater frequency by the general surgeon.

The rate of perforation varies from 0.2 to 2.0% and is directly related to the experience and manual dexterity of the endoscopist. Sometimes, it may be difficult to detect a perforation early, because of heavy sedation of the patient during the procedure. Any degree of persistent pain after colonoscopy and polypectomy should raise the question of perforation. Most procedures are not painful and pain after endoscopy is almost non-existent.

Perforation of the large bowel in colonoscopy may happen in any one of the following ways.

a. Rupture of A Diverticulum

This type of perforation is the result either of increased pressure in a closed space or of inadvertent insertion of the tip of the scope into a very large diverticulum.

b. Perforation of A Narrowed Lumen

When the lumen of the bowel is narrowed in a disease state and if this is not recognized by the endoscopist, one may perforate the bowel wall by forceful insertion of the instrument through this narrowed lumen.

c. Perforation of Healthy Bowel

This type of perforation happens mostly in the hands of a beginner endoscopist. One observes a disappearance of submucosal vessels and blanching of the mucosa at endoscopy before excessive force results in perforation of the bowel well. Therefore, one should stop advancing the instrument whenever blanching of the mucosa is observed or when the patient has severe pain during the procedure.

We feel that when perforations do occur during colonoscopy, an urgent laparotomy should be sought for the following reasons:

1. The size of the perforation could be quite large (up to 3 cm in our series and upto 8 cm in another series[5] and the endoscopist is often unsure of its size.

Despite other authors' claims that the bowel has already been prepared for colonscopy,[6] and would be cleaner than an unprepared bowel, we found that the degree of soiling in the peritoneal cavity can be quite significant (Table 2). Also in elderly patients, they are not able to drink all the required PEG solution.

3. At laparotomy definitive diagnosis and surgery could be carried out, for example, a segmental resection for a large polyp and an extensive peritoneal toilet for faecal soiling.

In our series, all the perforations occurred in either the sigmoid colon or the recto-sigmoid colon. This is not surprising in view of the acute angulation of this region of the large bowel and the difficult maneouvring in the region during endoscopy. Also 3 of the patients had complained of acute abdominal pain and had tenderness and guarding or tenderness on examination of the abdomen. Radiologically these 3 patients also had gas under the diaphragm. The remaining patient had perforation diagnosed when the endoscopist was able to visualise bowel through his scope.

At laparotomy despite the large bowel being prepared for endoscopy, there is always a certain amount of faecal soiling. However, where the time interval of injury to laparotomy is less than 8 hours, the surgeon is usually able to do a primary repair after a thorough peritoneal toilet.

However, when the patient is elderly ($>$ 75 years) with little reserves and pre-existing medical illness, the prognosis despite early surgery remains guarded and colonoscopy should be performed with care on these patients.

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ORIGINAL ARTICLES

ENDOSCOPIC ND-YAG LASER IN UPPER GI MALIGNANCIES

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INTRODUCTION

In recent years, laser coagulation has become part of the armamentarium in the treatment of gastrointestinal malignancies. Initial reports from the early 1980's have emphasized the simplicity of the procedure and its relative freedom from complications especially in the treatment of tumour stenoses.[1,2,3,4] *More recently, however, complication rates of between 12 and 30% have been reported. Some of these complications are serious, such as perforation of the viscus and uncontrolled bleeding.*[5]

We reviewed our experience with the Nd-YAG laser in the palliation of 20 consecutive cases of carcinoma of the oesophagus and stomach treated during the period 14.10.86 to 28.6.88.

MATERIALS, METHODS AND PATIENTS

The Nd-YAG Laser[6]

This is a solid state laser with the yttrium-aluminium-garnet crystal (hence the acronynm YAG) as the lasing medium. This is doped with active neodymium ions. These latter ions are excited by light from a krypton discharge lamp. The resultant laser beam has a wave-length of 1064 nm. The Nd-YAG laser has the unique property of having a low absorption by tissues with respect to its scattering of the light. This results in a uniform distribution of radiation to the tissue causing deep coagulation around the point of the laser beam.

The power required to treat most gastro-intestinal tumours is 80-100W using the non-contact technique where the laser probe is held between 8-10 mm away from the target. The contact technique using the sapphire tip[7] uses a lower working output of between 10-25W.

The temperature rise and distribution of heat in tissues exposed to laser depend on the energy absorbed and on the thermal conducting properties of the tissues treated. At a temperature of between 50-60°C no essential organic changes take place. Heating to more than 60°C results in coagulation. Between 90-100°C the water in the tissue begins to vaporize. Following dessication and shrinkage of the tissue, its temperature rises rapidly to several hundred degrees whereupon it carbonizes, vaporizes and burns. The laser can thus be used both for haemostasis and for recanalization.

TECHNIQUE OF ENDOSCOPIC LASER COAGULATION

We used various methods of creating a passage through a tumour stenosis, depending on whether the stricture is endoscopically passable.[8]

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If the endoscope cannot be advanced beyond the tumour stenosis, the stricture can be dilated with Eder Puestow dilators under radiological and endoscopic control. The tumour is then ablated with laser from a distal to proximal direction. An experienced operator can commence ablation of an impassable stricture from a proximal to distal direction. However, this is not recommended for the novice.

If the tumour is endoscopically passable, then laser coagulation was done either from a proximal to distal direction or vice versa depending on the preference of the operator. The advantage of laser coagulation from a distal to proximal direction is that the lumen of the oesophagus is always visualized, thus obviating the danger of perforating the viscus.

The procedure was carried out under sedation with small doses of IV valium (diazepam) and pethidine given intermittently when necessary.

PATIENTS

Over a 20 month period, 9 cases of oesophageal carcinoma and 11 cases of gastric carcinoma were treated with the Nd-YAG laser for palliation of symptoms (Table 1). The average age of these patients was 67 years. All of these patients have advanced disease and/or severe concomitant medical illnesses which precluded resection of their tumours.

Table 1: Anatomic location of the tumours

	Previous Surgery	No previous Surgery	Total
Oesophagus	2	7	9
Stomach	5	6	11

ANATOMIC LOCATION OF THE TUMOURS

Of the 20 cases, 9 were oesophageal tumours in the oesophagus and 11 were from the stomach. Those that have had previous surgery represented recurrences. (Table 1).

SYMPTOMATOLOGY

The 2 main symptoms which these patients presented with were obstruction and bleeding (Table 2). All of the patients with oesophageal carcinoma had severe dysphagia. Of the gastric carcinoma, those that were situated at the pylorus or at the cardia had obstruction. The rest presented with bleeding.

Table 2: Symptoms

	Oesophagus	Stomach
Obstruction	9	6
Bleeding	0	5

An upper GI endoscopy was performed and the laser probe was passed through the endoscope and laser coagulation is commenced. The procedure was well tolerated and most treatment sessions lasted 30-45 minutes.

NUMBER OF LASER SESSIONS

The majority of patients had only one laser treatment. The average number of session were 1.9 for oesophageal cancers and 1.1 for stomach cancers. (Table 3)

Table 3: Number of laser sessions required

	One	Two	Three
Oesophagus	4	2	3
Stomach	8	3	0

COMPLICATIONS

2 had transient fever and 2 had transient dysphagia. The fever, which settled spontaneously after one to 2 days, was probably due to the absorption of necrotic products. Dysphagia was related to post-laser oedema which temporarily reduced the luminal size of the viscus. There were no major complications of perforation or significant bleeding.

SYMPTOMATIC RELIEF

All except one of the patients experienced good relief of their symptoms. Those who had dysphagia were able to eat within one day after their laser treatment and they remained patent until they died. Laser coagulation was able to control all patients who presented with bleeding.

The one failure amongst our cases was that of a patient who had advanced carcinoma of the cervical oesophagus. The lumen of the oesophagus could not be adequately visualized and the procedure was abandoned for fear of perforation. He subsequently had a feeding gastrostomy constructed.

SURVIVAL

The mean survival of the patients was 4.0 months for oesophageal carcinoma and 4.8 months for gastric carcinoma. This reflected the advanced state of the disease in these patients. Ranges of survival were 1-12 months for oesophageal carcinoma and 1-11 for gastric carcinoma.

DISCUSSION

Endoscopic laser palliation is an efficacious means of providing symptomatic relief for these patients with obstruction and bleeding from advanced cancer of the oesophagus and stomach. This has been well substantiated by many studies elsewhere.[1,2,3,4] In an international enquiry into the results of laser treatment for upper GI malignant stenoses conducted by Ell et al,[8] it was found that the average success rate for initial treatment was appreciably better than 80%. It was also found that the more experienced the units were in the use of the Nd-YAG laser, the higher the success rate and the lower the complication rates. We were successful in 19 out of 20 cases.

In patients with dysphagia, the quality of palliation obtained by the use of the Nd—YAG laser made it a reasonable alternative to intubation with prosthesis. With bleeding tumours, laser haemostasis is certainly as effective as other methods such as heat probe, adrenaline or alcohol injection.

The endoscopic laser has opened up a new avenue of palliative treatment in advanced GI malignancies. The morbidity and mortality associated with palliative surgical intervention is avoided. We have been able to demonstrate its effectiveness in our patients. Despite its higher costs, its benefits in achieving palliation with very minimal general systemic upset to the patient has certainly made it a very useful tool in our management of gastrointestinal cancer.

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SYMPOSIUM

VOCATIONAL TRAINING IN FAMILY MEDICINE IN SINGAPORE

Dr Lim Kim Leong, *MBBS (S'pore), FCGP (S'pore)*

The role of the College is to provide EDUCATION.

The long term role of the College is to institute vocational training for the intending general practitioners and to organise undergraduate teaching at the University. Family Practice must become a positive factor in our health care delivery system and family practitioners must be trained by design if they are to serve "Cum Scientia Caritas".

These sentiments were expressed in the editorial of the first issue of the "General Practitioner", the official publication of the College, in March 1973. Our official publication is now called the Singapore Family Physician.

This shows how far-sighted the founders of the College were. Those of us in the College have never deviated from these ideals we have set out to achieve when the College was formed in June 1971. Although 17 years have passed, we can still find satisfaction in seeing our work come to fruition.

As you all know, although we are celebrating the 40th year of the Department, the name has been changed from the Department of Social Medicine and Public Health to the Department of Community, Occupational and Family Medicine in 1987 incorporating the new discipline of Family Medicine. Although the teaching of undergraduates has been going on for some years now, it is only with the establishment of this new division that Family Medicine is formally recognised in the University as a distinct medical discipline, and is now one of the examination subjects. As far as the medical students are concerned this seems to be the important part of the development.

Family Medicine has been recognised as a distinct discipline in its own right in many countries and I am sure many of us here are glad that it is now rightfully recognised in Singapore. It is no longer a subject of doubt or disdain, and those who continue not to recognise our discipline cannot be in the main stream of medical thinking.

In some countries, doctors are not allowed to be general practitioners or family physicians without an adequate period of training in the discipline.

Table 1 shows you the requirements of vocational training in Family Medicine in the various countries.

In those countries where Family Medicine has been well established, vocational training has been found to be well structured. Although there is a considerable variation in the structure of vocational training around the world, most programmes average 3 years in length. They usually comprise a combination of hospital-based teaching rotations usually 18-24 months, (e.g. medicine, paediatrics, obstetrics and gynaecology, surgery) and supervised practice experience in a teaching general/family practice. You will however note that in Canada and South Africa it is 2 years. It is 1 year in the Netherlands although it is not shown in the table.

It is reported that in the USA, 75% of the students choosing Family Medicine as a

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TABLE 1

COMPARISON OF EDUCATION ACTIVITY IN FAMILY PRACTICE

Country	Medical School Departments/ Divisions	Undergraduate Core Curriculum	Duration of Residency Training	Residency Required for Certification	Recertification Required
United States	Most	Most	3 years	Yes	Yes
Canada	All	Most	2 years	Yes	Yes
United Kingdom	All	Most	3 years	Yes	No
Denmark	One	No	3 years	No	No
Norway	All	Yes	3 years	No	No
Sweden	None	No	Informal	No	No
Australia	All*	No	4 years	No	No
New Zealand	All†	Yes	3 years	No	No
Japan	One‡	Very limited	Informal	No	No
South Africa	Most	Most	2 years	No	No

*Departments of Community Health, Community Practice, or Community Medicine
†Division of Primary Health Care in a Department of Community Health or part of Department of Medicine
‡Department of Primary Medicine

Source: John P Geyman & John Fry: FAMILY PRACTICE — An International Perspective in Developed Countries p 161

career took graduate training. While in Belgium, Netherlands, Sweden and UK, it was reported that 100% of the students took graduate or vocational training.

In Britain, no doctor is allowed to be a principal in a private practice unless he has satisfactorily completed general practice training. The GP training programme consists of 3 years, of which 1 year will be as a trainee GP attached to an approved trainer GP. A trainer GP has to satisfy certain specific criteria and he is paid by the government for the work. During the 1 year GP attachment there is a structured programme for the trainee GP. At the end of the training the trainee will be given a Certificate of Prescribed Experience, and will take the membership examination conducted by the Royal College of General Practitioners.

In Canada and the USA, family physicians are trained in the university departments of family practice located in the university hospitals. A 3 year family practice residency programme provides a balanced training in ambulatory and hospital care.

At the end of the residency he will sit for the American Board of Family Practice examination. In USA, family physicians are recertified every 7 years. Besides having to sit for an examination, the family physician is required to satisfactorily complete 300 hours of CME in the 7 years, and to have satisfactorily submitted to the Board samples of medical records of his patients.

In Australia, 8 out of 10 doctors seeking training for general practice are provided with 4 years of training through the Family Medicine Programme (FMP) conducted by the Royal Australian College of General Practitioners, with the support of an annual federal government grant of over A$7 million. The in-service training comprises of 2 years of hospital training beginning after the intern year and 2 years of general practice experience, including 6 months of supervised training in an accredited teaching practice. A certificate of satisfactory completion of training is awarded, and most trainees elect to sit for the fellowship examination of the RACGP at the end of their training.

In Singapore, approximately half of

every cohort of doctors end up as family physicians/general practitioners. It is realised that it is most essential that these doctors be given proper training and experience to equip them for their role. Family physicians/general practitioners should be trained by design and not by default. It is my pleasure to announce that in June this year, the first batch of 10 doctors had elected and have been selected to undergo a traineeship in Family Medicine.

Before I go into the details of the traineeship programme I would like to say a few words about the 3 terms: primary care or primary health care, general practice, and family medicine.

Primary health care doctors are doctors of first contact, doctors who provide primary care as opposed to those in the secondary and tertiary care. This term therefore includes not only the general practitioners in the private sector, the doctors in the primary health in the public sector, but also company doctors, factory doctors, A & E doctors and even doctors from the Singapore Armed Forces.

Family Medicine, family physicians are terms favoured by the American world. Thus their colleges are named the American Academy of Family Physicians (AAFP), the College of Family Physicians of Canada, and the Philippine Academy of Family Physicians (PAFP).

In the English world, general practice or general practitioner are terms they still retain and use. Thus their colleges are still named the Royal College of General Practitioners (RCGP), the Royal Australian College of General Practitioners (RACGP), the Royal New Zealand College of General Practitioners (RNZCGP). Our is called the College of General Practitioners Singapore, and the Malaysians the College of General Practitioners Malaysia.

The terms "Family Medicine" and "General Practice" are used synonymously in WONCA, (the World Organisation of National Colleges and Academies of Family Medicine/General Practice). They are also used similarly in Singapore. Thus while our College is named the College of General Practitioners, the new department is called the Department of Community, Occupational and Family Medicine.

VOCATIONAL TRAINING IN FAMILY MEDICINE

This was initiated by the Ministry of Health this year and is a tripartite project by the Ministry, the University and the College, although as I pointed out earlier, the concept has been mooted and discussed at length by the College for more than a decade. Over the years we have submitted a few memoranda on the subject to the Ministry.

A six-man steering committee has been formed to develop the administrative structure and training details of the programme. The committee comprises 2 representatives from each of the 3 bodies and is presently under the chairmanship of Dr Chee Yam Cheng, Director of Medical Manpower, Ministry of Health.

The present committee comprises of the following:

Dr Chee Yam Cheng	(Chairman)
Dr Chen Ai Ju	(Dr Lam Sian Lian — alternate)
Prof Lee Hin Peng	(Dr Chan Cheow Ju — alternate)
Dr Goh Lee Gan	
Dr Lee Suan Yew	(Dr Koh Eng Kheng — alternate)
Dr Lim Kim Leong	(Dr Alfred Loh — alternate)

To be eligible for the traineeship, the doctors must have completed the first two years of their medical officership. This is because doctors posted to the Singapore Armed Forces for their national service after graduation have different durations of postings. The doctors must first indicate their interest in Family Medicine before they are invited to apply for the traineeship. They will then have to appear for an interview before the Selection Board. Although it might be desirable to have a 3 year traineeship programme, it was thought that for the moment a 2 year programme would allow more doctors to be put on the hospital posting programme.

The structure of the 2 year training programme is as shown.

1. a hospital posting programme
2. a family medicine teaching programme
3. a polyclinic posting.

THE HOSPITAL POSTING PROGRAMME

The hospital posting programme consists of 8 rotating 3 monthly postings, of which 4 are compulsory (medicine, surgery, paediatrics and O & G), and 4 are electives chosen from the following: orthopaedics, skin, eye, ENT and psychological medicine. The doctors would have seen posted to the Accident & Emergency Unit and trained in cardio-pulmonary resuscitation by the time they enter the training programme, and it was thought unnecessary to repeat the posting.

For each posting, the trainee is provided with a learning checklist to help him cover the knowledge and skills required to be learnt from that posting. The clinical tutor in the department will help him acquire the relevant knowledge and skills as set out in the checklist. The relevant checklists will have to be signed by the Head of the Department or his nominee at the end of each posting to indicate satisfactory completion or otherwise.

Hospital Posting: DERMATOLOGY

Name:

Period of Posting

from to

The trainee should be competent in the assessment and initial management of the following:

1. – eczema and contact dermatitis
   – occupational dermatoses
   – psoriasis
   – bacterial, fungal and viral infections
   – parasitic diseases
   – acne
   – urticaria
   – common hair and nail disorders
   – pigmentation disorders
   – blistering diseases
   – side effects of topical corticosteroids

The trainee should have the following skills:

2. – skin scrapings for microscopy
   – cauterization
   – skin biopsy
3. – cryotherapy with liquid nitrogen

Certified by: .....

on .....

Hospital Posting: INTERNAL MEDICINE

Name:

Period of Posting

from to

The trainee should understand the diagnosis, management and referral of the following conditions:

1. Respiratory Diseases
   – upper respiratory tract diseases
   – lower respiratory tract diseases
   – chronic airway pbstructive diseases
   – asthma
   – lung cancer
   – pulmonary tuberculosis
   – pleural effusion
   – empyema
   – lung abscess
   – pneumothorax
2. Gastro-intestinal diseases
   – peptic ulcer
   – gastro-enteritis
   – functional disorders of the gastro-intestinal tract
   – cancers of gastro-intestinal tract
3. Disease of the liver and gall bladder
   – cholangitis and cholecystitis
   – gallstones
   – liver cancer
   – cirrhosis of liver

Certified by: .....

on .....

THE FAMILY MEDICINE TEACHING PROGRAMME

The family medicine teaching programme is as shown in table 2.

It consists of 8 modules, each occupying a term of 3 months. Each module is of 8 sessions, made up of 4 sessions on the concepts of family medicine, 3 sessions of case discussion and journal club and 1 session of practice management including medico-legal and ethical issues.

TABLE 2

TRAINING PROGRAMME IN FAMILY MEDICINE (JUNE 1988 – MAY 90)

Term	1	2	3	4	5	6	7	8	9	
From To	JUN 88 AUG 88	SEP 88 NOV 88	DEC 88 FEB 88	MAR 89 MAY 89	JUN 89 AUG 89	SEP 89 NOV 89	DEC 89 FEB 90	MAR 90 MAY 90	JUN 90 AUG 90	SEP 90
	HOSPITAL ROTATING POSTINGS								OPD	
	FAMILY MEDICINE TEACHING PROGRAMME								Revision	Exam

Notes

HOSPITAL POSTINGS

4 **compulsory**
* Medicine
* Surgery
* Paediatrics
* Obstetric & Gynaecology

4 **elective**
* Orthopaedics
* Skin
* Psychological Medicine
* ENT
* Eye

The seminar and workshop approach will be the main teaching methods. Trainees will be given reading assignments and cases to present during the teaching sessions. The success of the teaching programme depends to a large extent on the active participation of the trainees.

The Family Medicine teaching programme is also open to all family physicians and general practitioners who are interested in learning more of the discipline of Family Medicine. It is especially recommended for those doctors intending to sit for the Diplomate examination of the College.

POLYCLINIC POSTING

A 3 months' posting to the polyclinics will round up the 2 years rotating hospital postings and provides a period of consolidation and application of core knowledge and practical skills that they have acquired. The posting will also provide the time and opportunity for the trainees and candidates to prepare for the MCGPS examination.

The trainees will also be required to attend the CME update lectures held on Friday evenings. As we all know CME is still the main method to keep up with medical knowledge.

At the end of the programme the trainees will be encouraged to sit for the College examination. This again is in line with the practices of most of the Colleges around the world.

In the near future it is hoped that some of the general practitioners' clinics could be accredited as teaching centres and trainees could be posted to them for the real general practice experience. When we can comfortably provide for a 3 year vocational training programme we will then have a programme equal to any in the world.

The underlying principle and philosophy of the training programme is the practice of Family Medicine, the delivery of holistic medical care. Whether the patient comes in with a cold or a cancer, he should be given the same care. Whether the patient is the employer or the employee, he should be given equally good treatment. And if a national service boy cannot cope with his training, he should not just be punished militarily. He should be guided and helped to overcome his difficulties.

All doctors should practise good medicine; all primary care doctors should practice good family medicine. Anything less cannot be acceptable.

FAMILY MEDICINE TEACHING PROGRAMME JUN 88 – NOV 88
– once a week, on Saturday, 2.30 – 5.30 pm

Term		1				2	
Period		**June 88 – Aug 88**			**Sept 88 – Nov 88**		
Submodule	**1A**	**PRACTICE SKILLS**			**2A**	**THE CHILD AND ADOLECSCENT**	
Concepts in FM 4 sessions per term	-1	2 Jul	Family Medicine: Discipline & Practice; MCGP Examination		-1	17 Sep	Common problems in childhood
	-2	23 Jul	Consultation & communication in general practice		-2	1 Oct	Normal & abnormal development; the handicapped child
	-3	6 Aug	Counselling in general practice		-3	15 Oct	Problems of the adolescent
	-4	20 Aug	Towards earlier diagnosis		-4	29 Oct	Behavioural problems in the child and adolescent
Submodule	**1B**	**RESP DISORDERS: CVS DISORDERS**			**2B**	**GASTROINTESTINAL DISORDERS**	
Case Discussions/ Journal club 3 sessions per term	-1	9 Jul	Acute resp problems in general practice		-1	24 Sep	Upper GIT problems in general practice
	-2	30 Jul	Chronic resp problems in general pratice		-2	8 Oct	Lower GIT problems in general practice
	-3	13 Aug	Ischaemic heart disease		-3	22 Oct	Jaundice in general general practice
Submodule	**C**	**PRACTICE MANAGEMENT**			**C**	**PRACTICE MANAGEENT**	
Practice Management medico-legal & ethical topic 1 session/term	1C	27 Aug	Medical record keeping Confidentiality of records		2C	5 Nov	The GP's responsibility in – Notification – Certification – Dispensing Medical negligence

FAMILY MEDICINE TEACHING PROGRAMME DEC 88 – MAY 89
– once a week, on Saturday, 2.30 – 5.30 pm

Term		1				2	
Period		**Dec 88 – Feb 89**				**Mar 89 – May 89**	
Submodule	**3A**	**CONTINUING CARE; TERMINAL CARE**			**4A**	**THE ELDERY PATIENT**	
Concepts in FM 4 sessions per	-1	10 Dec	Problems in continuing care		-1	11 Mar	Fitness in old age
	-2	7 Jan	Continuing care: hypertension		-2	25 Mar	Common problems in old age
	-3	21 Jan	Continuing care: diabeters mellitus		-3	8 Apr	The elderly infirm; domiciliary care
	-4	11 Feb	Terminal care		-4	22 Apr	Rehabilitation in the care of the elderly
Submodule	**3B**	**URINARY TRACT; BLOOD; ONCOLOGY**			**4B**	**PSYCHOLOGICAL DISORDERS**	
Case Discussions/ Journal club 3 sessions per term	-1	17 Dec	Urinary tract problems in general practice		-1	18 Mar	Common psychological problems in general practice
	-2	14 Jan	Blood disorders in general practice		-2	1 Apr	Major psychiatric problems
	-3	18 Feb	Oncology and general practice		-3	15 Apr	The psychiatric patient in the community
Submodule	**C**	**PRACTICE MANAGEMENT**			**C**	**PRACTICE MANAGEMENT**	
Practice Management medico-legal & ethical topic – 1 session/term	3C	25 Feb	Managing the practice – The doctor as manager – Clinic policies – Appointment system		4C	29 Apr	Computer use in the clinic The doctor's information system GP research

FAMILY MEDICINE TEACHING PROGRAMME JUN 89 – NOV 89
– once a week, on Saturday, 2.30 – 5.30 pm

Term		5			6		
Period		**Jun 89 – Aug 89 (May 89 – Jul 89)***			**Sep 89 – Nov 89 (Aug 89 – Oct 89)***		
Submodule	**5A**	**COMMUNITY, FAMILY & PATIENT**		**6A**	**THE ADULT PATIENT**	
Concepts in FM 4 sessions per term	-1	20 May	Human behaviour in Illness	-1	9 Sep	Problems of living
	-2	3 Jun	Belief systems in health and disease	-2	23 Sep	Harmful lifestyles
	-3	17 Jun	The family in health and disease	-3	7 Oct	Occupational health
	-4	1 Jul	Preventive medicine; health promotion; health screening	-4	21 Oct	Fitness to work; statutory examinations
Submodule	**5B**	**SKIN; COLLAGEN DISORDERS; TRAVEL MED**		**6B**	**BONE & JOINT DISORDERS**	
Case Discussions/ Journal club 3 sessions per term	-1	27 May	Common skin problems in general practice	-1	16 Sep	Common rheumatic problems in general practice
	-2	10 Jun	Collagen disorders in general practice	-2	30 Sep	Emergency medicine & CPR; the housecall
	-3	24 Jun	Travel medicine	-3	14 Oct	Sports injuries
Submodule	**C**	**PRACTICE MANAGEMENT**		**C**	**PRACTICE MANAGEMENT**	
Practice management medico-legal & ethical topic – 1 session/term	5C	8 Jul	Practice issues – Information/advertising – Workload & patient share – Contract practice – FFS; HMO & health insurance	6C	28 Oct	Setting up practice – Single or partnership – Location – Clinic design – Equipping the clinic

**2nd batch (1989-1991)*

FAMILY MEDICINE TEACHING PROGRAMME DEC 89 – MAY 90
– once a week, on Saturday, 2.30 – 5.30 pm

Term	7			8		
Period	**Dec 89 – Feb 90 (Nov 89 – Jan 90)***			**Mar 90 – May 90 (Feb 90 – Apr 90)***		
Submodule	**7A**	**THE FEMALE PATIENT; STD**		**8A**	**THE PREGNANT PATIENT**	
Concepts in FM 4 sessions per term	-1	9 Dec	Fertility including Family Planning and assisted reproduction	-1	10 Mar	Antenatal care Drug use in pregnancy
	-2	23 Dec	Common gynaecological problems in general practice	-2	24 Mar	The at-risk pregnacy
	-3	6 Jan	Gynaecological cancers	-3	7 Apr	Surgical problems in pregnancy; LSCS
	-4	20 Jan	STD and AIDS	-4	21 Apr	Medical diseases and pregnancy
Submodule	**7B**	**NEUROLOGY: EYE & ENT DISORDERS**		**8B**	**ENDOCRINE & METABOLIC DISORDERS**	
Case Discussions/ Journal club 3 sessions per term	-1	16 Dec	Neurological problems in general practice	-1	17 Mar	Common endocrine problems in general practice
	-2	30 Dec	The eye in general practice	-2	31 Mar	Metabolic disorder in general practice
	-3	13 Jan	ENT problems in general practice	-3	14 Apr	Nutritional counselling
Submodule	**C**	**PRACTICE MANAGEMENT**		**C**	**PRACTICE MANAGEMENT**	
Practice management medico-legal & ethical topic – 1 session/term	7C	3 Feb	Financial management – Budgetary control – Office book-keeping – Statement of accounts & Balance sheet	8C	28 Apr	Quality assurance Self audit Peer review

**2nd batch (1989-1991)*

SYMPOSIUM

TRENDS IN UNDERGRADUATE TEACHING IN FAMILY MEDICINE

Dr Chan Cheow Ju, *MBBS (S'pore), FRACGP, MCGP (S'pore)*

INTRODUCTION

This paper traces recent developments in undergraduate family medicine teaching in Singapore and examine the following areas to seek directions for the future:

1. *The overall objective of undergraduate family medicine (FM) teaching.*
2. *What to teach (about family medicine).*
3. *Who to teach (and with what resources).*
4. *How to teach (i.e. the methods of learning and teaching).*
5. *Which areas of involvement (in the university curriculum).*

OVERALL OBJECTIVE OF UNDERGRADUATE GENERAL PRACTICE/FAMILY MEDICINE TEACHING

The medical faculty's end product statement states that "the overall aim of the undergraduate medical course is *to produce a balanced scientific and humanitarian doctor:* a graduate equipped to function initially as a houseman, with *the ability to work in primary health care* and with the potential to undergo specialised training."

When general practice teaching started in Singapore in 1971, the initial modest overall objective appeared to be an exposure to general practice "to enable them wherever possible, to see GPs at work in the setting of the patient's natural environment".

Since February 1987, family medicine has been accepted as an academic discipline in the National University of Singapore. It is now clearly recognized that family medicine teaching can make a positive contribution to the production of a balanced scientific and humanitarian doctor. The future trend then is to further develop this role.

How are we going to be able to do this? I would first like to examine the area of "what to teach".

WHAT TO TEACH

As a young lecturer, I tend to feel a little uneasy about the question that hospital doctors often ask of family medicine lecturers, "And what are you going to teach that I cannot?" I find much comfort in the following modest reply by a general practitioner, "Nothing, but there are some aspects of clinical medicine that I can teach more easily than you and vice versa... I can teach some things better because I am daily dealing with them in the context of my clinical work and so can better illustrate them to the students. Likewise you can more easily teach about the detailed investigation of rare but important conditions because these are what you are predominantly dealing with in your clinical work."[1]

The important point to get across to our specialist colleagues is that general practice teaching complements hospital based teaching in the same way that a

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primary health care system complements the hospital system. Patients in the hospital are removed from their usual life in the community; advances in technology and fragmentation of medical practice into specialities and sub-specialities tend to overlook a whole person approach in patient care. Thus, there is the need for the medical student to be acquainted with the aspects of care of patients in their natural family and social environment. Such a whole person approach is more easily illustrated in the general practice context.

The following are some areas covered in our current undergraduate teaching programme:

(a) Clinical knowledge in
  (i) common illnesses e.g. hypertension, diabetes and common infectious diseases
  (ii) early diagnosis of serious illnesses
  (iii) recognition of acute emergencies.
(b) Knowledge, application and problem solving skills based on
  (i) a hypothetical deductive approach in diagnosis
  (ii) a whole person approach in patient care with family and psycho-social considerations
  (iii) comprehensive care of the entire family.
(c) Communication skills
  (i) in establishing rapport with patients
  (ii) in diagnosis
  (iii) in therapeutic communications i.e. counselling
  (iv) in patient health education
  (v) in referrals and communications with colleagues.
(d) Practice management skills, emphasizing the importance of good medical records keeping.

We will continue to reinforce teaching in these areas and identify further areas of teaching through the years.

In addition to the above areas relevant to the production of a scientific doctor, general practice teaching has a special place in demonstrating and imparting the art of medicine to young impressionable undergraduates — this we do through the General Practice preceptorship.

WHO TO TEACH? AND WITH WHAT RESOURCES?

The general practice posting (currently with 2 students attached to one tutor over a one week period at the end of the third year of the medical course) affords the student a demonstration of the practice of the art of medicine, and the preceptor can make a lasting impression in cultivating the right attitudes to humane doctoring.

The GP's practice is medical practice in the community where patients live their real lives.

The GP tutor, his practice and practice community are the chief resources in teaching.

George Silver made the point that practice determines education, "it is not the education that will change the practitioners, but reformed practice that will redesign medical education."[2]

This quotation emphasizes the leading role that the College of General Practitioners of Singapore, through active continuing medical education and vocational training for GPs, has to play in undergraduate education. The College's active role in helping GPs upgrade their practice, and also its role in stimulating interest in undergraduate teaching will help to develop a core of quality GP teachers and teaching practices.

The role of the academic general practice staff then, would include the following:

(a) define the syllabus for GP teaching
(b) organise the GP preceptorship
(c) review and consolidate the student's learning in the GP clinics
(d) spearhead the development of teaching resources and
(e) organise teachers' workshops including sessions on teaching methodology.

This brings us to the area of how to teach.

HOW TO TEACH

Clinical case teaching, observation and learning will clearly remain the chief teaching methods.

Alan Gregg said: "He who teaches best shows his students how to learn, not what to think in 1953 but how to think and how to learn in that long stretch of days awaiting you (the students) till, let us say, the year 2000"[3] (and beyond!) This statement expresses well the guiding principle in organising our departmental teaching.

Our current teaching programme and methods in relation to the GP posting include:

(a) an introductory lecture module preceding the GP posting to provide the basic concepts in family medicine.

(b) student assignments during the posting, including a practice log and a case write up, to encourage active participation in the learning process.

(c) student workshops at the department on the job of the GP with regards to skills and attitudes required, challenges of being a GP, differences between hospital and general practice, notification and certification of diseases and dispensing.

The students are instructed to make observations in preparation for the workshops. At the department, they break up into small discussion groups of about 8 to 12 students to work out a group answer and to present it to the class. The response can be enthusiastic. In one presentation as many as 5 students readily shared practice problems encountered during their clinic postings, illustrating with examples.

(d) departmental sessions on general practice problem based exercises: again students are organised into small groups. Most of the exercises are based on real-life scenarios compiled by an international panel of general practitioners and published in "The Nature of General Family Practice."[4] An example of such an exercise and the workshop answer of the students are shown in figures 1 and 2 respectivley.

Figure 1: An example of a problem givn in the "GP problem based exercises" workshop

Problem

Miss Linda W Aged 26

As a result of birth injuries, Linda is an epileptic of below normal intelligence. She meets a male of similar intellectual impairment at a sheltered workshop. They decide to marry and live on their meagre workshop income plus welfare payments. She wants children, yet is unable to prepare simple meals for herself. They come to you because of family pressure against marriage and pregnancy.

3.1 Identify the problems to be managed.

3.2 What further information do you need to advise this patient?
- (a) information about the husband-to-be?
- (b) information about the patient's parents?
- (c) information about the husband-to-be's parents?

3.3 If they have a child, will it be of subnormal or of normal intelligence?
- (a) If the husband-to-be is also intellectually impaired because of birth injuries?
- (b) If the husband-to-be has intellectual impairment but no somatic or neurological cause is found?
- (c) The husband-to-be is a treated cretin?

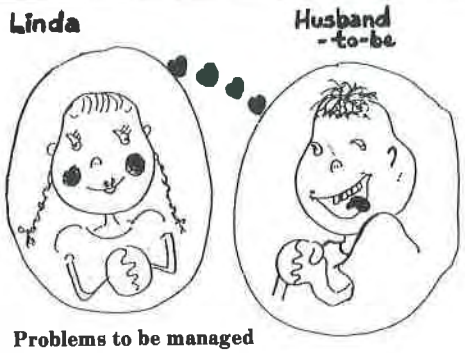
The students enjoyed these exercises, but they were also analytical and task oriented in finding solutions to the problems. Some even undertook to role play the scenario to better present their answers.

Workshop style learning and teaching have worked rather well so far.

Another feature is syndicate teaching. I have the privilege of teaching (and learning) together with other academic GP staff (in particular, Dr Goh Lee Gan) and participating GP tutors during the departmental teaching sessions. Syndicate teaching has made the sessions more lively for the students as well as the teachers. Joint teaching with our colleagues in the department and the hospital departments will be explored.

Students' evaluation feedback provides useful pointers for future planning. Clinical teaching and exercises remain the most highly rated parts of the GP posting. Amongst the heartwarming comments was one from a student who said "I want to be a doctor like my GP tutor."

Figure 2: GP problem based exercise — one workshop answer presented by the students.



3.1 Problems to be managed

Linda

— epileptic
— can't prepare meals for herself

1. below normal intelligence
2. insufficient income
3. family pressure
4. in love enough to want marriage
5. wants children

3.2 Further information

(a) Husband-to-be

— cause of IQ impairment
family and birth history, development milestones

— degree of impairment
ability to look after himself
can he cook?

— is he really in love with her?

— purpose of getting married?

— how determined is he to get married?

(b) and (c) Parents

— attitudes towards their child

— family history

— reason of objection and degree

— family financial status

— willingness to look after the couple/ grandchildren

3.3 Intelligence of Child

Assuming there is no genetic factor in the cause of Linda's impairment

(a) probably normal
? susceptibility to birth injuries

(b) unable to predict

(c) why husband-to-be was a cretin
? familial — child may be a cretin
? sporadic — child will be normal

Some results of the 1987 evaluation of the Family Medicine module are shown in Figure 3. Some suggestions for improvement included attachment to more than one GP clinic and better access to GP teaching book resources.

Figure 3: Results of the evaluation of Family Medicine Module by third year medical students of 1987

Components		Percentage Good and Excellent
1.	Lectures	53.7% (individual lecture varies from 47% to 58%)
2.	Clinical sessions	79%
3.	Discussion with clinical tutor	82%
4.	Case presentations	67%
5.	Course content coverage	67%

AREAS OF INVOLVEMENT

Looking again at the overall objective, there are parts of the medical-curriculum where Family Medicine teaching can increase its contribution to the production of the humanitarian and scientific doctor. Within the Department of Community, Occupational and Family Medicine there are the following:

(a) In the government polyclinic posting — students are exposed to the parallel system in the public sector combined with learning experience and teaching programme similar to the GP posting.

(b) In the community health survey projects, the influence of GP teaching has surfaced in the topics chosen e.g. studies on the utilization of GP services and the utilization of specialist services.

(c) In the medico-social cases academic GP tutors are involved in taking students. Perhaps GP clinics and the polyclinics will provide the patients for such studies in future.

(d) General practice teaching has also been related to the practical aspects of community medicine and occupational medicine.

There is also a scope for syndicate teaching with various hospital specialty departments on top of the medico-social cases. This could involve departmental academic staff as well as practising GPs.

CONCLUSION

For the future, we will continue to learn from the development of family medicine

teaching overseas. Our local trends, we hope, will follow the worldwide growth of family medicine as an academic discipline.

For this to materialise continuing support from the University, the College of GPs, and the practising GP community is necessary.

ACKNOWLEDGEMENTS

1. Family Medicine interest group, Department of Community, Occupational and Family Medicine, National University of Singapore for their support and encouragement.
2. Dr Goh Lee Gan, the first academic GP staff member of the Department of Community, Occupational and Family Medicine, NUS, for his invaluable input for this paper.
3. Dr Fong Ngan Phoon, senior lecturer, Department of Community, Occupational and Family Medicine, NUS, for the results of the students' evaluation of the 1987 GP posting.

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HOME STUDY SECTION

THE COMBINED ORAL CONTRACEPTIVE PILL

Dr Omar B S T, *MBBS (S'pore), MCGP (S'pore), FRACGP*

INTRODUCTION

The combined oral contraceptive pill is the most effective method of contraception [apart from sterilisation]. When taken conscientiously, the Pearl Index [number of pregnancies per 100 women years] is between 0.1 and 0.3 compared with 1.5 — 3.0 for the intrauterine cervical device and 2-3 per 100 women years for the progesterone only pill.

MECHANISM OF ACTION

The combined oestrogen and progestogen pill inhibits ovulation. The oestrogen component inhibits the release of FSH while the progestogen prevents LH release.

There are also effects on the endometrium making it unsuitable for implantation, and a thickening of cervical mucus, due to the progestogen effect of the combined pill, makes it more impenetrable to sperm.

The abrupt withdrawal of progestogen at the end of each dosing period assures prompt onset of withdrawal bleeding similar to normal menstruation.

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Types of Combined Oral Contraceptive Pill

Two types are in common use.

1) Fixed Dose Pill. This contains the same amount of oestrogen and progestogen in each of the pills.
2) Triphasic Pill. This mimics more closely the natural cycle. Triphasic preparations divide the cycle of contraceptive use into three phases, each with varying doses of oestrogen and progestogen. The correct order of ingestion of the tablet is therefore important.

The triphasic formulations are an attempt to reduce the progestogen dose since prospective studies from the Royal College of General Practitioners UK suggested that not only the oestrogen dose but also the progestogen dose is involved in the incidence of hypertension and cardiovascular disease [i.e. venous thromboembolism, myocardial infarction and stroke] in women taking combined oral contraceptive pills. However, todate there are no good data to suggest that there are health benefits from this formulation compared to the 30 mg oestrogen fixed dose combination.

SIDE EFFECTS

Minor Side Effects

Some of the more common but minor side effects of the combined pill and their management are summarised in Table 1. They are usually reported more frequently during the early cycles and can diminish with time.

Table 1 Minor side effects of the combined pill and their management

Side Effects	Management
Nausea, vomiting	Take the pill at night rather than in the morning Reduce oestrogen dose Change to progestogen-only pill
Weight gain	Reduce progestogen
Cyclic weight gain	Reduce oestrogen
Chloasma	Avoid sun, use blockout sunscreens Stop oestrogen and try progestogen-only pill
Breakthrough bleeding	Exclude missed pills or malabsorption due to severe vomiting or diarrhoea or occasionally a drug interaction Change type of progesterone e.g. levonorgesterel to norethisterone Increase oestrogen
Breast tenderness	Reduce oestrogen or increase progestogen
Acne	Increase oestrogen Decrease progestogen
Pill Amenorrhoea	Exclude pregnancy Increase oestrogen Reduce progestogen

Major Side Effects

More serious risks to health and rarely to life occur though their incidence is not common and may be further reduced by proper prescribing and selection of patients. Table 2 lists some of these more serious side effects.

Table 2 Major side effects of the combined pill

* Venous Thromboembolism
* Hypertension
* Coronary thrombosis
* Stroke [cerebral thrombosis and haemorrhage]
* Diabetogenic effect
* Effects on lipid metabolism
* Gallbladder disease [cholelithiasis, cholecystitis]
* Hepatocellular adenoma

The risks of a cardiovascular or cerebrovascular catastrophe happening are strongly related to:

* age [marked increase once over 35 years old]
* cigarette smoking [for all risks this by itself is far more dangerous than the pill, but it does seem to act synergistically with the pill to give even greater risks in smokers who take the pill]
* Obesity
* diabetes mellitus
* hypertension
* familial hyperlipidaemia

About 5% of pill users will develop hypertension after 5 years. Its incidence is increased by family history of hypertension, age, parity and obesity. It is rarely severe and seems to be largely reversible usually returning to normal 3 to 6 months after stopping the pill.

The combined pill causes a small decrease in glucose tolerance but it does not increase the incidence of clinical diabetes mellitus. It may well increase the need for insulin or oral hypoglyaemic agents in diabetes.

Oral contraceptive pills have conflicting effects on serumlipids and their overall effect will reflect the progestogenic and oestrogenic activity of the particular formulation. In general, progestogens depress high density lipoprotein [HDL] cholesterol and increase low density lipoprotein [LDL] cholesterol levels, while oestrogens have the opposite effect. Plasma level of serum triglycerides is also increased.

The overall increase in serum triglycerides may partly explain the increased incidence of gallbladder disease in women on the pill. In addition, gallbladder bile is more saturated with cholesterol in women on the pill than in non-users. Cases of cholestatic jaundice have been described.

TERATOGENICITY AND CARCINOGENICITY

There is no increased rate of spontaneous abortion or foetal abnormalities in women who conceive soon after stopping oral contraceptives, nor in women who have inadvertently taken oral contraceptives while pregnant. There is no medical reason for suggesting that women need to have 1 normal cycle off the pill before attempting pregnancy.

There is considerable controversy over the potential carcinogenicity of the pill. The available evidence is fairly reassuring. There appears to be no clear-cut link with cervical or breast cancer, although hepatocellular adenoma may be more common with high-dose pills used over many years.

It is worth nothing that the combined pill has a protective effect against carcinoma of the endometrium and ovary.

FERTILITY AND THE PILL

There is no evidence of decreased fertility in former oral contraceptive users, nor of any permanent effect on fertility, although there may be a delay in the return of fertility. By 24 months normal fertility levels are achieved in former oral contraceptive users. The so-called post-pill amenorrhoea syndrome appears to be a temporal rather than a causal relationship. When women with amenorrhoea of more than 6 months' duration, following cessation of oral contraceptives, are investigated properly, the causes for the amenorrhoea are no different from a group of women with amenorrhoea who have never used oral contraceptives. With adequate treatment with fertility drugs, the conception rate amongst women with amenorrhoea following pill use is exactly the same as for those with amenorrhoea who have never taken the pill.

BENEFICIAL EFFECTS

The use of any drug is a balance of risk versus benefit; this is especially true of the combined pill. Contraceptive efficacy is certainly the most important advantage. Some of the other benefits of the pill are summarised in Table 3.

Table 3 Beneficial effects of the combined pill

Reduced incidence of:
* menstrual disorders
* benign breast disease
* benign ovarian cysts
* carcinoma of ovary
* carcinoma of endometrium
* pelvic inflammatory disease
* acne [in the majority of patients]
* iron deficiency anemia
* peptic ulceration
* severity of rheumatoid arthritis symptoms

DRUG INTERACTIONS

The effectiveness of the combined pill may be reduced by

rifampicin
anticonvulsant drugs [phenytoin, phenobarbitone, carbamazipine]
broad spectrum antibiotics [ampicillin, cotrimonazole, tetracycline]

If long term treatment with rifampicin or an anticonvulsant is necessary then 50 mg or more of oestrogen should be used if oral contraception is the method of choice.

When a course of a broad spectrum antibiotics is prescribed for a woman who is also taking a combined pill she should be advised to use additional contraception during and for 14 days after the course of the antibiotic.

While the pill may impair the action of anticoagulants, antidiabetic agents and imipramine, it may, on the other hand, potentiate the effects of corticosteroids.

CONTRAINDICATIONS

Table 4 lists some of the absolute and relative contraindications to the combined pill. While the presence of an absolute contraindication rules out the prescription of the pill, the presence of a relative indication indicates the need for the doctor to discuss with the woman the benefits and risks to her of taking the pill as well as the need for careful surveillance while she is taking the pill.

Table 4 Contraindications to the use of the combined pill

Absolute [existing or in the history]	**Relative** [existing or in the history]
Thromboembolic disease	Age over 35 years
Cerebrovascular disease	Mild hypertension
Coronary artery disease	Obesity
Moderate to severe hypertension	Diabetes mellitus
Over 35 year old smokers	Asthma
Undiagnosed abnormal vaginal bleeding	Lactation
	Migraine
Malignancy of breast and genital tract	Gallbladder disease
	Depressive states
Hepatic adenoma	Cigarette smoking
Impaired liver function	Hyperlipidaemia
Known or suspected pregnancy	
Focal migraine	

The presence of two or more relative contraindications strengthens the case against using a combined pill. Other forms of contraception should be considered. The final choice will be a balance of the doctor's discretion and the patient's wishes.

CHOICE OF PILL

Having excluded those with absolute contraindications and having identified and assessed those with relative contraindications, the doctor is faced with numerous preparations of combined pills to choose from. There is no foolproof method for selecting the most suitable pill which will have the lowest possible dose able to control both the fertility and menstrual cycle of the patient with no side effects.

There is little difference in metabolic effects between the low dose, fixed dose pills and the triphasic pills. Theoretically, the triphasics are pills of choice because of their lower progesterone dose. However, these do not suit all women. For some women, they are too oestrogenic resulting in sore breasts, heavier menstrual loss and dysmenorrhoea.

In any woman's cycle there are a number of symptoms that will occur due to a preponderance of oestrogen or progestogen in that cycle. Thus where oestrogenic side effects are troublesome in the normal cycle a predominantly progestational pill should relieve these and vice-versa.

Whichever pill is tried, side effects are highest in the first cycle reducing over the next three cycles so that patients should be encouraged not to request a change in pills too quickly because of apparent side effects. It is best for the doctor to build up expertise with a few brands and to change the brand at intervals of less than 3 months.

STARTING THE COMBINED PILL

The pill may be started on the 5th day of the cycle in which case extra contraception should be used for the first 14 days. Alternatively, the pill is started on the first day of menstruation when extra precautions are not necessary but the cycle will be short.

When changing from one pill to another either start 7 days after the previous pill and use extra contraception for 14 days or the new pill is started the day following the last of the old pills in which case no extra precautions are necessary.

MISSED PILLS

The patient should be instructed to take a missed tablet as soon as it is remembered. If 2 consecutive tablets are missed, they should be taken as soon as remembered. The next tablet should be taken at the usual time. If more than 24 hours have passed without a pill alternative contraceptive method should also be used until she has taken a tablet daily for seven consecutive days.

If 3 consecutive tablets are missed, all medication should be discontinued and the remainder of the package discarded. A new tablet cycle should be started 7 days after the last tablet was taken, and a supplementary contraceptive method should be used for the remaining days without tablet and until the patient has taken a tablet daily for 7 consecutive days.

"MOVING" THE PERIOD

Occasionally the patient requests the "moving" of her period because it will coincide with some special events e.g. marriage, examinations, competitive sports. Such requests require 2 months' notice to produce the desired effect. Periods are pushed forward by taking 2 packs consecutively without a break. The triphasics are unsuitable for use in "moving" periods.

In the case of athletes, the period should occur before the sporting event as performance is best post menstruation; the pill will have metabolised from the circulation so that no problems of "drug taking" will occur on routine match testing.

An increasing trend in the West is to take the pill from the first day of the cycle for up to 3 months continuously producing a "cycle" of only 4 periods per year. This is particularly useful for women who have severe dysmenorrhoea which is not responding totally to oral contraceptive usage or, alternatively, for women who have

menstrual migraine or other problems associated with menstruation.

The only disadvantage of a 3-monthly cycle is a theoretical one of taking an extra 9 weeks of hormones annually. No adverse clinical effects have ever been demonstrated in women using a 3-monthly cycle.

BREASTFEEDING AND THE PILL

Lactation is a time of decreased fertility but this does not mean unguarded intercourse is safe; 7% of women ovulate during lactation.

The combined pill given in the postpartum period may interfere with lactation; there may be a decrease in the quantity and quality of the breast milk. Furthermore, a small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The effects, if any, on the breast-fed child have not been determined.

FOLLOW UP

A scheme is suggested as shown in Table 5. Careful explanation should be given to the patient at all stages and good notes, preferably on a purpose designed card, should be kept.

Table 5 Suggested follow up

Initial consultation	History taking; physical examination [including breast examination], BP; weight; urine Teach breast self examination Pelvic examination and cervical smear [if not done at this visit, to do so on follow-up visit]
3 months later	BP. Ask about cycle control and side effects. Is she happy with her pill?
6 monthly	BP; weight; Look out for and ask about side effects. Yearly cervical smear and breast examination; reinforced on importance of regular self-examination of the breasts.

CONCLUSION

Oral contraceptives have revolutionised the place of women in society. Their efficacy, convenience and overall safety have allowed women to decide if and when they will become pregnant and to plan their domestic and business lives accordingly. They are, however, potent pharmacological agents and the use of oral contraceptives presents an unnacceptable risk of women with certain medical or social characteristics.

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MULTIPLE CHOICE QUESTIONS

1. The risk of pregnancy despite combined contraceptive steroid usage is increased by concurrent treatment with
   A. diazepam
   B. isoniazid
   C. phenobarbitone
   D. phenytoin
   E. rifampicin

2. Oral contraceptives containing an oestrogen and a progestogen
   A. cause a rise in the serum total thyroxine concentration
   B. may cause increased facial pigmentation
   C. prevent ovulation by a direct effect on the ovaries
   D. are a recognised cause of cholestetic jaundice
   E. may impair glucose tolerance

3. The following are recognised complications of combined hormonal oral contraceptives
   A. osteomalacia
   B. peripheral neuropathy
   C. hemiplegia
   D. inappropriate ADH secretion
   E. hypertension

4. In combined hormonal oral contraceptives, oestrogens
   A. inhibit release of luteinizing hormone [LH]
   B. inhibit release of follicular stimulating hormone [FSH]
   C. cause increase risk of blood clotting
   D. cause thickening of cervical mucus
   E. are associated with ovarian carcinoma

5. When giving contraceptive advice you would consider that
   A. Carcinoma of the endometrium is less frequent amongst takers of the combined pill
   B. the combined pill should be stopped if migraine appears
   C. varicose veins are a contraindication to the combined pill
   D. ampicillin reduces the effectiveness of the combined pill
   E. an oestrogen-containing contraceptive pill taken after a woman has conceived increases the risk of congenital malformation

Anawers

1. C D E
2. A B D E
3. C E
4. B C
5. A B C D

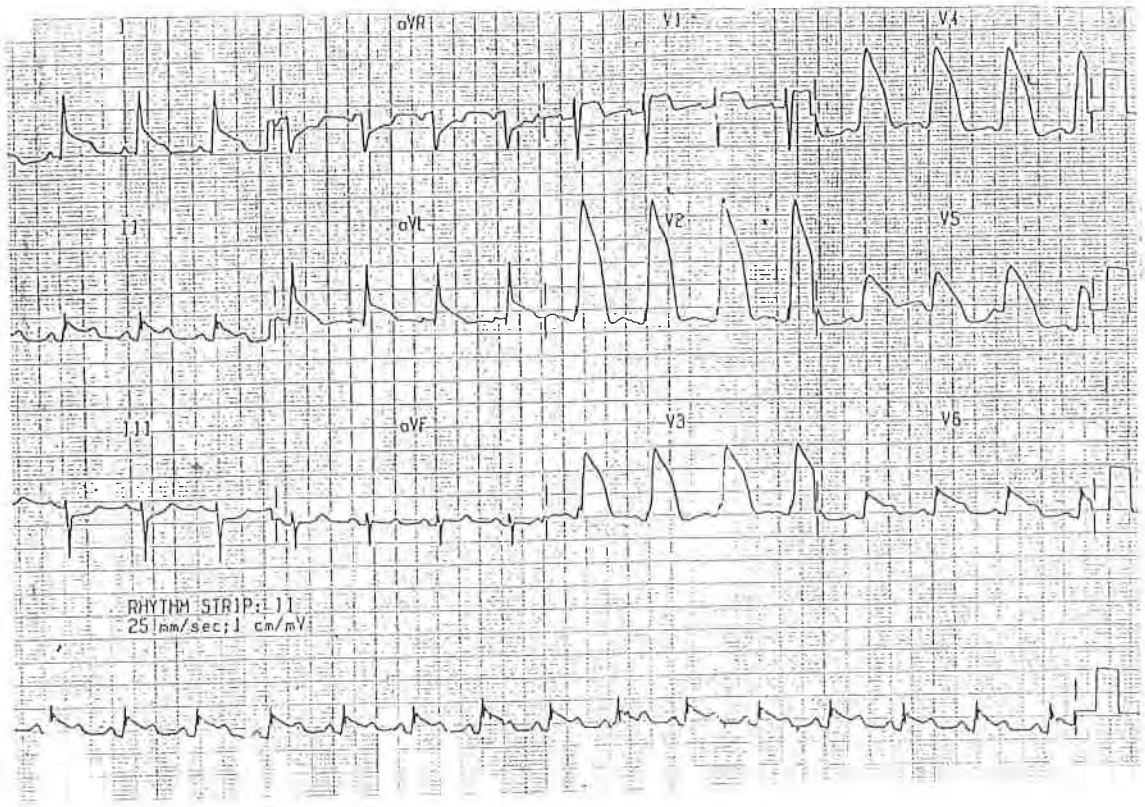
HOME STUDY SECTION

ECG QUIZ

Contributed by **Dr Baldev Singh,** *MBBS (S'pore), M Med (Int Med), MRCP (UK)*

This ECG belongs to a 41-year-old Indian female who was seen within minutes of experiencing symptoms.

1. What are the abnormal features?
2. What are the possible diagnoses?
3. What would be your initial treatment?



ANSWERS TO ECG QUIZ

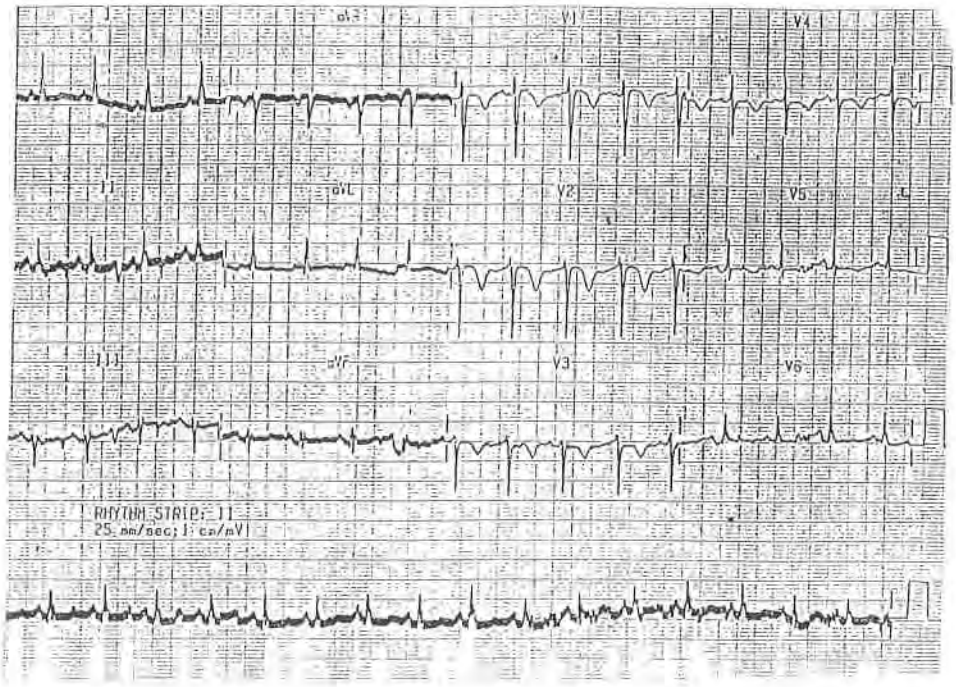
1. The ECG shows very high elevation of ST segment in I, II, AVL and V1 to V6.

2. This ECG shows the hyperacute change of an evolving anterolateral myocardial infarction. It is fairly typical of what Professor B L Chia sometimes refers to as the "tombstone" ECG. Morphologically the complexes look like tombstones and in some patients such an ECG may herald a similar prognostic significance. Severe coronary artery spasm could give a similar ECG appearance.

3. This lady was an inpatient in the hospital when she developed retrosternal pain accompanied by diaphoresis and vomitting. She was seen within minutes and soon after the ECG was done she was hooked up to a bedside monitor and an IV started. Streptokinase preparation was started but even before this could be started her blood pressure fell to 60 systolic. Fluid was rapidly infused and Streptokinase infusion commenced following administration of IV Hydrocortisone and Phenergan. Within 15-20 minutes the monitor scope showed that ST segments were beginning to descend. The blood pressure started to pick up and some multiple PVCs and runs of ventricular tachycardia were seen. These are suppressed with bolus dose of IV Lidocaine and an infusion of IV Lidocaine started. A total of 1.5 million units of Streptokinase were infused over 1 hour. An ECG done after completion of the Streptokinase is reproduced below. It shows Twave inversion in I, AVL, V1 to V5 and loss of R wave amplitude. Following stabilisation she was moved to the CCU.

   It is clear that successful thrombolysis was achieved in this patient and what could have been a major full thickness infarction was averted and the patient got away with only subendocardial injury. Promptness of therapy probably played a crucial role.

   This patient will be scheduled for early coronary angiography so that the location and severity of the underlying coronary artery lesion can be defined and definitive therapy undertaken.



ECG done after streptokinase therapy.

NEWS FROM THE COUNCIL

FIRST ANNUAL SCIENTIFIC CONFERENCE

The College of General Practitioners Singapore held its first Annual Scientific Conference on 12 and 13 November 1988. 160 members and non-members participated in the two-day Conference which ended with the annual dinner at the Pavilion Inter-Continental Hotel. The highlight of the Conference included a Meditech Singapore '88 exhibition.

COLLEGE DIPLOMATE EXAMINATION

The MCGP examination ended on 6 November 1988. Of the 9 candidates, 4 were successful and our heartiest congratulations go to them. They were: Dr Huan Meng Wah, Dr Suresh Mahtani, Dr Tan Chek Wee and Dr Wilson Wong.

NEW MEMBERS

The College welcomes the following colleagues who have joined the College:

Dr Chong Sheau Peng [Ordinary]
Dr Lee Boon Fa [Ordinary]
Dr David Lim Hock Kuang [Ordinary]
Dr Lim Wan Ie [Ordinary]
Dr Ng Eng Chan [Ordinary]
Dr Ng Yew Kwok [Ordinary]
Dr Tan Chin Lock [Ordinary]
Dr Janet Briggs [Associate]
Dr Virginia Lien Yee Wun [Associate]
Dr Lim Joo Lee [Associate]
Dr Ong Fung Chin [Associate]
Dr Vincent Tan Beng Sim [Associate]
Dr Tan Ngaip Koon [Associate]
Dr Myint Myint Thein [Associate]

FAMILY MEDICINE TEACHING PROGRAMME

Module 3 commenced on Saturday 10 December 1988. Details of the module are provided below:

SUBMODULE	CONTINUING CARE: TERMINAL CARE	
Concepts in FM	10.12.88	Problems in continuing care
	07.01.88	Continuing care: hypertension
	21.01.88	Continuing care: diabetes mellitus
	11.02.88	Terminal care
SUBMODULE	**URINARY TRACT; BLOOD; ONCOLOGY**	
Case Discussions Journal Club/ 3 sessions per term	17.12.88	Urinary tract problems in general practice
	14.01.88	Blood disorders in general practice
	18.02.88	Oncology and general practice
SUBMODULE	**PRACTICE MANAGEMENT**	
Practice mgt. medico-legal & ethical issues	11.02.88	Managing the practice — The doctor as manager — Clinic policies — Appointment system

THE SINGAPORE FAMILY PHYSICIAN
Guidelines For Authors

Authors are invited to submit material for publication in the Singapore Family Physician on the understanding that the work is original and that it has not been submitted or published elsewhere.

The following types of articles may be suitable for publication: case reports, original research work, audits of patient care, protocols for patient or practice management and review articles.

PRESENTATION OF THE MANUSCRIPT

The whole paper

* Normally the text should not exceed 2000 words and the number of illustrations should not exceed eight.
* Type throughout in upper and lower case, using double spacing, with three centimetre margins all round. Number every page on the upper right hand corner, beginning with the title page as 1. Make all necessary corrections before submitting the final typescript.
* Headings and subheadings may be used in the text. Indicate the former by capitals, the latter in upper and lower case underlined.
* Arrange the manuscript in this order: (1) title page, (2) summary, (3) text, (4) references (5) tables, and (6) illustrations.
* Send three copies of all elements of the article: summary,text, references, tables and illustrations. The author should retain a personal copy.

The title page

* The title should be short and clear.
* Include on the title page first name, qualifications,present appointments, type and place of practice of each contributor.
* Include name, address and telephone number of the author to whom correspondence should be sent.
* Insert at the bottom: name and address of institution from which the work originated.

The summary

* The summary should describe why the article was written and give the main argument or findings.
* Limit words as follows: 100 words for major articles; 50 words for case reports.
* Add at end of summary: an alphabet listing of up to 8 keywords which are useful for article indexing and retrieval.

The text

The text should have the following sequence:

* Introduction: State clearly the purpose of the article.
* Materials and methods: Describe the selection of the subjects clearly. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well known. Describe new or substantially modified methods, giving reasons for using them and evaluate their limitations. Include numbers of observations and the statistical significance of the findings where appropriate.

  Drugs must be referred to generically; all the usual trade names may be included in parentheses. Dosages should be quoted in metric units.

  Laboratory values should be in SI units with traditional units in parentheses.

  Do not use patient's names, initials or hospital numbers.
* Results: Present results in logical sequ-

ence in the text,tables and illustrations.

* Discussions: Emphasise the new and important aspects of the research and the conclusions that follow from them. Indicate the implications of the findings and limitations. Relate the observations to other relevant studies.

Illustrations

* Diagrams, line drawings, photographs or flow charts are valuable but their use will be subject to editorial policy. Transparencies or prints are acceptable for colour reproduction at the authors' expense.
* Each illustration must carry its appropriate Figure number and the top should be clearly labelled.
* Figure legends, typed (double-spaced) and each on a separate page should be no more than 45 words.

Tables

* Any table must supplement the text without duplicating it.
* Each should be numbered, typed on a separate sheet with an appropriate title.

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Further reading

1. INTERNATIONAL COMMITTEE OF MEDICAL JOURNAL EDITORS. Uniform requirements for manuscripts submitted to biomedical journals. Ann Intern Med 1988; 108: 258-265.
2. Bailar III JC and Mosteller F. Guidelines for Statistical Reporting in Articles for Medical Journals. Ann Intern Med 1988; 108: 266-273.

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The Editor,
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AUGMENTIN

clavulanate-potentiated amoxycillin

A MAJOR DEVELOPMENT IN ANTIBIOTIC THERAPY

In recent years, the treatment of infection has been complicated by the increasing prevalence of ß-lactamase producing strains of bacteria. ß-lactamase destroys many oral cephalosporins and penicillins,[1,2] resulting in treatment failure.

AUGMENTIN is the first antibiotic to utilise Beecham's discovery of the powerful ß-lactamase inhibitor, clavulanic acid. This neutralises the bacterial defence, bringing more strains and species within the scope of oral therapy.

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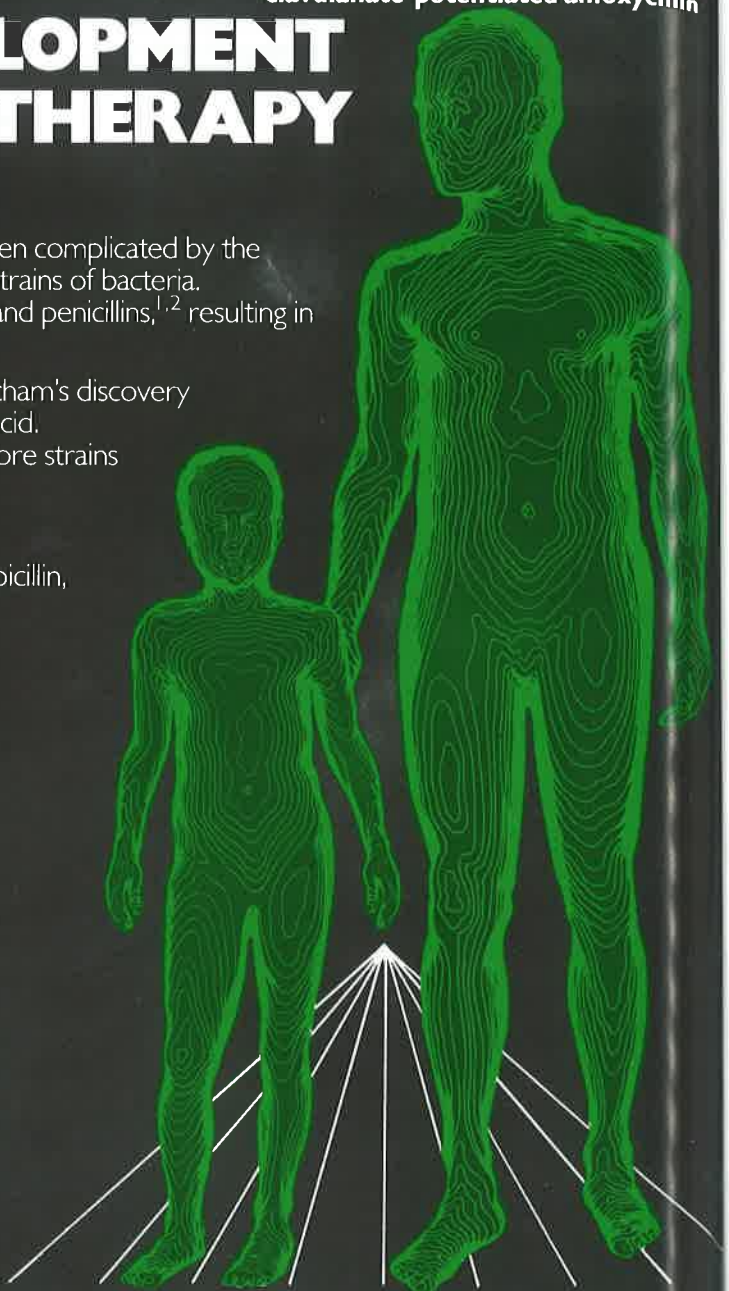
- **AUGMENTIN – Outstanding success** against today's infections.



Adult infections	No. of patients assessed	Clinically cured/ improved	Clinical success
Upper respiratory tract[3]	146	141	97%
Lower respiratory tract[3]	98	89	91%
Urinary tract[3]	175	167	95%
Skin & soft tissue[3,4]	81	75	93%

Paediatric infections	No. of patients assessed	Clinically cured/ improved	Clinical success
Upper respiratory tract[5,6]	70	70	100%
Lower respiratory tract[7]	28	27	96%
Urinary tract[6,7,8]	61	57	93%

PRESCRIBING INFORMATION

INDICATIONS: Chest, ear, nose, throat, genito-urinary, skin and soft tissue infections including those caused by ß-lactamase producing organisms. **DOSAGE: Adults and children over 12 years** one AUGMENTIN tablet (375mg) three times daily. **Children 7-12 years** 10ml AUGMENTIN syrup (312mg) three times daily. **Children 2-7 years** 5ml AUGMENTIN syrup (156mg) three times daily. **Children 9 months-2 years** 2.5ml AUGMENTIN syrup (78mg) three times daily. In severe infections these dosages may be doubled. Treatment should not be extended beyond 14 days without review. **CONTRA-INDICATION:** Penicillin hypersensitivity. **PRECAUTIONS:** Safety in human pregnancy is yet to be established. Oral dosage need not be reduced in patients with renal impairment unless dialysis is required. **SIDE-EFFECTS:** Uncommon, mainly mild and transitory, eg diarrhoea, indigestion, nausea, vomiting, candidiasis, urticarial and morbilliform rashes. If gastro-intestinal side-effects do occur they may be reduced by taking AUGMENTIN at the start of meals. **PRESENTATIONS:** 375mg AUGMENTIN tablets each containing 250mg amoxycillin (1) and 125mg clavulanic acid. (2) 156.25mg AUGMENTIN syrup. Powder for preparing fruit flavoured syrup. When dispensed each 5ml contains 125mg amoxycillin (1) and 31.25mg clavulanic acid. (2) Not all presentations are available in every country. (1) as the trihydrate, (2) as the potassium salt.

Further information is available from:
Beecham Research Laboratories
Brentford, Middlesex, England.
AUGMENTIN and the BRL logo are trademarks.

References 1. Proc. Int. Symp. on AUGMENTIN, Excerpta Med. (1980), **ICS 544**, 173. 2. Excerpta Med. (1980), **ICS 544**, 19. 3. Excerpta Med. (1980), **ICS 544**, 187. 4. Scot. Med. J., (1982), 27, 5. 5. Proc. Europ. Symp. on AUGMENTIN, Excerpta Med. (1982), **CCP4**, 341. 6. Excerpta Med. (1982), **CCP4**, 347. 7. Excerpta Med. (1982), **CCP4**, 325. 8. Excerpta Med. (1982), **CCP4**, 334.

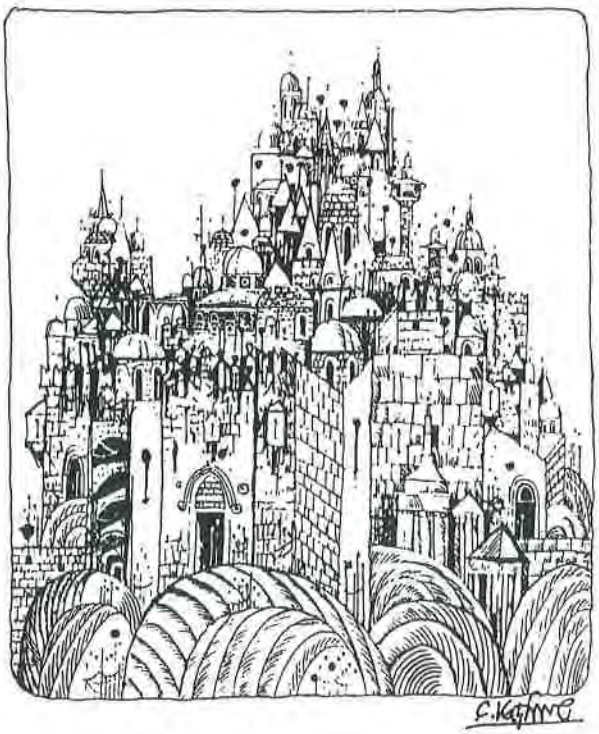
The World Organization of National Colleges,
Academies and Academic Associations of General Practitioners/Family Physicians

12th WORLD CONFERENCE ON FAMILY MEDICINE

WONCA 1989

JERUSALEM

JERUSALEM, ISRAEL, 28 MAY - 1 JUNE, 1989



JERUSALEM 1989

"UNIVERSAL ISSUES IN FAMILY MEDICINE"

FOR GENERAL INFORMATION

(See Next Page)

GENERAL INFORMATION

FOR 12TH WORLD CONFERENCE ON FAMILY MEDICINE

LOCATION

The National Convention Center and the Jerusalem Hilton Hotel are the headquarters of the 12th World Conference of the World Organization of National College, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA).

LANGUAGE

The official language of the Conference is English.

REGISTRATION FEES

	until February 28, 1989	after
Active Participant	US$340.00	US$400.00
Accompanying Person	US$ 50.00	US$ 50.00
Residents in Training*	US$150.00	US$200.00

*On presentation of certification

Fees for ACTIVE PARTICIPANTS and RESIDENTS IN TRAINING include: participation in all scientific sessions, invitations to social events (excluding the Festive Dinner) and all printed material of the Conference.

Fees for ACCOMPANYING PERSONS include: participation in all sessions, invitations to all social events (excluding the Festive Dinner) and a specially arranged program to coincide with scientific sessions.

Tickets for the Festive Dinner may be purchased at a cost of US$40 per person.

Registration fees can only be paid directly to the Secretariat, and NOT through travel agents outside of Israel. Payment may be made in Eurocheques (in the currency of the issuing country). CREDIT CARDS ARE NOT ACCEPTED. Checks should be made out to: **WONCA 1989.**

Registration fees can also be paid by bank transfer to Bank Leumi Le-Israel B.M., Kikar Malchei Israel Branch, Tel Aviv, Israel, to Bank Account No. PATAM 816/056438.

CLIMATE

The weather in Jerusalem in May/June is generally warm and pleasant by day and cooler by night. Temperatures range from 16°—28°C (61°—82°F).

TRANSPORTATION TO JERUSALEM

The most convenient way to reach Jerusalem from Ben Gurion International Airport, is to pre-order a transfer at the time you make your flight and hotel reservations with your travel agent. In addition, Egged bus service leaves the airport regularly for Jerusalem. Passengers can also share "sherut" taxi service at a fixed price per passenger. Private taxis are also available at a fixed price. You may ask the driver to show you the official price list, which is also posted at the taxi station in the airport area.

SECRETARIAT

The Secretariat will be pleased to provide any information required. Please address all correspondence to:

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