General Practice

The basis of all diagnosis is history, physical examination and special investigation.

Special investigation refers to all those technical aids to diagnosis which have multiplied with the advent of new technology.

It is readily apparent that there are widely divergent views and practices amongst Family Physicians in different countries for example, Britain and the United States.

These differences also exist amongst General Practitioners in South Africa and this has sometimes led to bitter debate.

It is my purpose in this paper to attempt to place special investigation in perspective, in relation to:

1 Diagnosis and management of illness in General Practice.

2 Detection of occult or asymptomatic disease also known as screening.

3 In both cases: the extent to which we ourselves should undertake these tests, many of which have been placed within our reach by modern technology.

At the outset let me state the principle with which we all agree:

Every investigation that we order or perform must be in the interest of our patients' welfare.

If we all accept this principle why do we see such variation in practice? Let me quote from an American source – "Principles of Family Medicine" by Rakel[1]:

"When selecting a laboratory test to monitor the progress of a disease, it is important to determine whether the result is likely to be worth the expense, whether the patient will benefit if the result is abnormal, and more importantly, whether you will change what you plan to do for the patient anyway".

"When subjecting a patient to a test, it is important to reflect on whether the risk and expense are worth the value of the information gained".

"New diagnostic tests should be subjected to the same scrutiny and vigorous evaluation as new pharmacologic agents. The threatening legal climate that pervades modern medical care has caused doctors to practice defensive medicine, This not only raises the cost of medical care but also promotes the overuse of uncomforable and potentially harmful testing measures".

Rakel refers to fear of litigation which has influenced the practice of medicine in America so profoundly, and, to the detriment of the patient. Herein lies an important message for us.

The best insurance against litigation is the existence of a warm and honest doctor-patient relationship. In a world of growing technology, depersonalization and emphasis on materialism this relationship is threatened. We must defend the right to practise personal medical care in the interest of our patients and ourselves.

Let us now look at the reasons why doctors over-investigate:

- Fear of litigation
- Patient demand
- Anxiety about missing organic disease
- Desire to practise "scientific" medicine

Patient demand

Fed by the media our patients have developed blind faith in the value of technology and demand investigations to which we often accede. At times the performance of certain tests may prove reassuring to our patients and ourselves. However, we must both be aware of the limitations of these investigations.

Take for example the oft repeated request for ECG and serum cholesterol by patients who persist in overeating, oversmoking and pursuing a lifestyle which leads inexorably to coronary artery disease.

Anxiety about missing organic disease

Our medical training is largely responsible for the high premium we place on missing organic pathology.

No such stigma attaches to missing psychological pathology even though the consequences may be as painful to the patient.

Several surveys have highlighted the incidence of emotional problems in General Practice. I refer only to Crombies[2] series because it included both doctors who were psychologically and organically orientated.

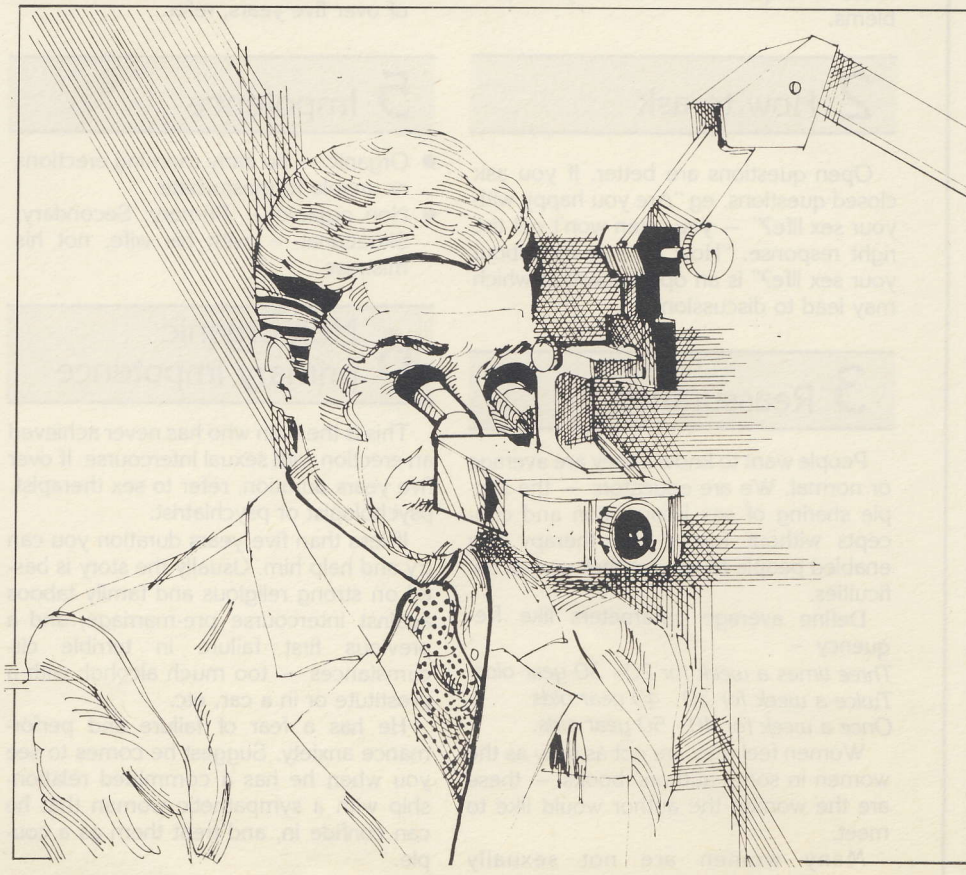
Their scores were remarkably similar. In summary:

In 50% of all problems presenting to the CP there was a significant emotional, behavioural or psychiatric component which could not be ignored.

In 30% of all problems this factor was of equal or greater importance than the organic.

There is no doubt that special investigation may have a small part to play in the exclusion of organic disease. However, so often "the physician becomes a pathogenic agent in perpetuating the illness by his well-meaning but never-ending efforts to find a physical cause".[3]

Herein lies the danger of special investigation in emotional illness. Not only is it often irrelevant, it may be counter-



The role of special investigation

by Dr Basil Jaffe. MBChB, DCH, RCP, RCS.

productive.

Nevertheless, as Balint states, "in general, doctors prefer diagnosing physical illness using the tags learnt from their consultant teachers, rather than diagnosing problems of the whole personality".[4]

Why does this happen?

I think it is because we prefer the certainty of organic diagnosis to which we are conditioned by our training. Emotional illnes is more nebulous and uncertain and demands of the doctor, the ability to tolerate doubt.

Balint himself recognised the limitations of traditional psychiatry to help us in this field. Thus, feeling inadequate and ill-informed in the emotional field, we take refuge in familar organic labels.

In this respect we are aided and abetted by our patients who regard emotional illness as a stigma and even moral weakness. So we act in collusion to avoid coming to grips with the real problems.

Desire to practise "Scientific" medicine

One of the most cogent arguments for vocational training is the need to bridge the gap between the teaching hospital approach to diagnosis and the method which we use to solve problems in General Practice.

Deeply ingrained in our psyche is the ritual of comprehensive history, complete examination and a battery of special investigations before we make a diagnosis free of emotion or any preconception about the patient.

This is **inductive diagnosis** which we are taught is scientific, and therefore good medicine. Anything short of this is, by implication, bad medicine.

Handicapped by the constraints of time we cannot take complete histories and carry out comprehensive examinations on all our patients but we can order special investigations. This is so often done in the belief that we are practising scientific medicine which in turn we equate with certainty, ie. TECHNOLOGY = SCIENTIFIC METHOD = CERTAINTY.

This traditional approach to science has been seriously challenged by Karl Popper who has postulated an alternative scientific approach based on deductive reasoning.

Medawar[5] in turn has applied this approach to the realities of clinical problem-solving. In brief, it consists of making hypotheses based on partial information and then putting these to the test.

In Medawar's words --- *"Imaginative conjecture and criticism, in that order, underlie the physician's diagnosis of his patients' ailments".*

This deductive method of diagnosis embraces the short cuts we take every hour of the day in our work as General Practitioners. It explains why we make hypotheses very early in the clinical encounter, often on the telephone.

It places special investigation in its correct place, ie. to validate or prove our hypotheses. The scientific credibility of this method depends on the severity of criticism we apply to every hypothesis we make.

Let me briefly comment on some of the stages of this process:

(a) Defining the problem and the patient

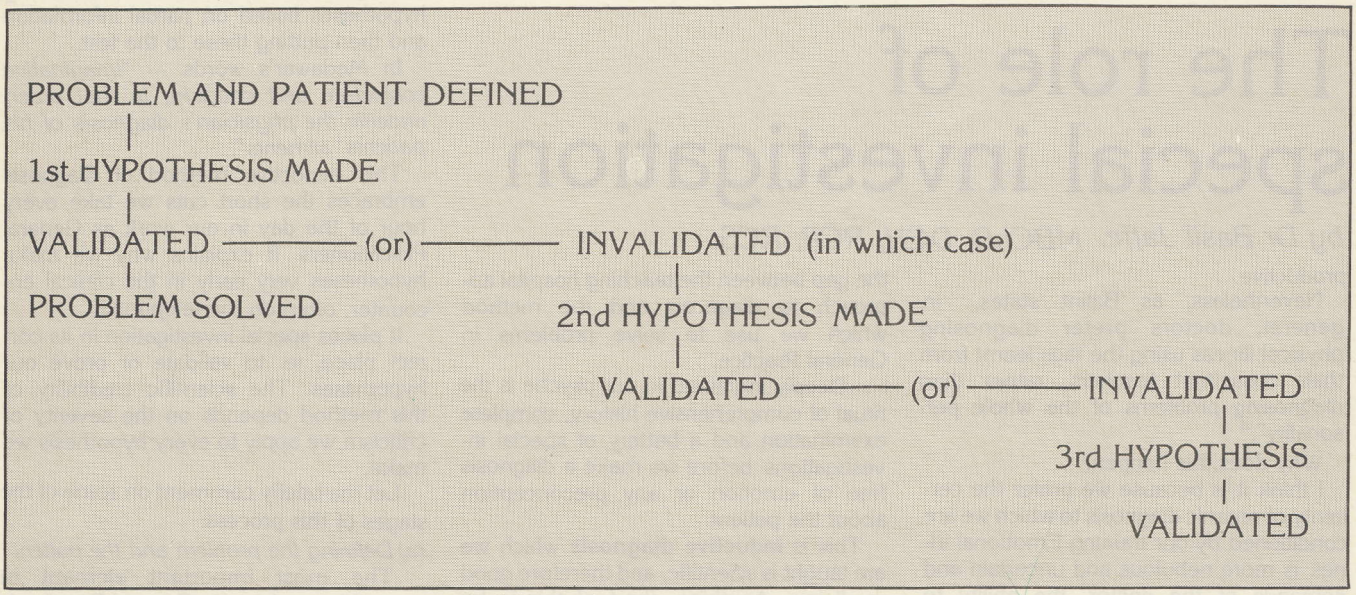
The most important element in problem-solving in General Practice is to define the real problem which is often not the one the patient presents. Of equal importance is the need to define the real patient who likewise is often not the patient who presents to us. Balint[6] and his workers have shown how frequently when a child is brought to the doctor it is the parent who is seeking medical help.

(b) Factors involved in making a hypothesis

- Subjective and objective cues derived from history and examination.
- Knowledge of the patient derived from continuing care.
- Knowledge of the community, its values, its attitudes and its diseases.
- Knowledge of the relevant areas of medicine which differ considerably from that needed in the hospital situation.
- High index of clinical suspicion which is based on:
  - (i) probability – common things occur commonly
  - (ii) natural history – potential urgency
  - (iii) prognosis – potential seriousness
  - (iv) treatability – the extent to which treatment will influence outcome
- Pattern recognition – the immediate recognition of a condition by familiarity with its pattern of presentation.
- Binary sorting decisions.

(c) Validation of hypotheses (confirming or proving)

- Time is often used to test, eg the diagnosis of a self-limiting illness
- Treatment is often undertaken before a definitive diagnosis is made
- Special investigation – our approach to special investigation may be summed up in the statement



A graphic depiction of the deductive method of diagnosis

> "the GP must justify his special investigation by his diagnosis whereas the specialist justifies his diagnosis by special investigation".[7]

If I have dwelt on this subject, I have done so to demonstrate that: there is a sound theoretical basis for the method we use to solve problems in General Practice; that it is different from the traditional teaching hospital model but infinitely more appropriate to our needs; that is is scientific; that special investigation plays a relatively small part in the whole process.

Screening

The second part of this paper deals with the subject of screening which has been defined as "the presumptive identification of unrecognised disease or defect by the application of tests, examination or other procedures, which can be applied rapidly".[8]

The prospect of identifying disease in its pre-symptomatic phase is a most attractive one. Why then is there so much controversy and debate about the value of screening?

The answer to this question becomes apparent when we examine the criteria necessary for a screening procedure:

There must be a suitable disease; a suitable test; a suitable treatment.

A suitable disease

The condition must be an important health problem. ie. it must be common, serious or both. There should be a recognisable latent or pre-symptomatic phase. The natural history of the condition should be adequately understood.

A suitable test

Simplicity – it must be simple and rapidly applied. It must be acceptable to the patient. Economy – cheap to apply. Sensitive – minimal false negatives. Specific – minimal false positives. Testing should ideally be a continuing process.

A suitable treatment

Effective treatment must be available, ie. it must cure or substantially alleviate symptoms. Early treatment as a result of screening must have some advantage over late treatment based on discovery through symptoms. Acceptability – ideally the treatment should not make the asymptomatic patient feel sick.

It will be readily appreciated that there are very few conditions which fulfill all of these criteria or even a majority of them. It is even more difficult to justify the practice of multiphasic screening which is the combination of multiple screening procedures aimed at the detection of a wide range of occult disease or defects.

Such a multiphasic screening programme was carried out by Irwin[9] on 1000 patients in his practice. Urine testing and ESR's were performed in the practice, the tests were carried out by Technicon Auto-analyser, at the teaching hospital. The value of each test was assessed by the clinical significance of unsuspected morbidity, the number of new diagnoses and the number of unexplained abnormalities found. He then placed his tests into three categories:

Those of little diagnostic value – blood sodium, potassium, chloride, total plasma protein, plasma albumin and serum transaminase also urinalysis for ketonuria and haematuria.

Those of doubtful value – blood calcium, alkaline phosphatase bilirubin, Co_2 combining power, blood urea and ESR.

Those of definite value – blood sugar haemoglobin and blood cholesterol; also urinalysis for albumen and glucose.

From the evidence of Irwin and others it is difficult to justify multi-phasic screening in General Practice. However, there certainly is a place for what Hodgkin[10] calls secondary screening, ie the performance of selected screening tests or procedures when the patient consults for other reasons.

In my own practice, I have been carrying out cervical smears on my patients for the past 15 years. The aim has been to perform the smear at two yearly intervals unless the cytologist recommends more frequent tests.

Results to date are as follows:

Number of women screened	1502
Number of smears performed	3849
Number of carcinoma-in-situ	10

The third part of this paper deals with the extent to which we as General Practitioners should be carrying out our own investigation. These fall broadly into two categories:

(a) those of a more sophisticated nature which require extra expertise and training
(b) tests which are simple to apply and rapidly performed

Sophisticated investigation

With regard to the more sophisticated investigation, the simple rule applies. If the requisite expertise has been acquired there is no reason why we should not perform these tests ourselves.

This applies particularly to doctors practising in rural areas remote from specialist services.

However, there is an important proviso to every test that we perform – it must be justified by the clinical situation. No one would question the value of electrocardiography in our work and indeed many General Practitioners have developed great expertise in this field.

However, the dangers of misinter-

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medical, gynaecological and urological causes. If no organic causes, other causes are –

Mainly ignorance: Poor sexual technique from either partner, or both. There is poor sex education here and you have to elicit how they make love, step by step, and if they have any idea of their sexual anatomy, eg where the clitoris is and what stimulation is preferred.

Fear of pain, pregnancy or performance.

Religious and moral taboos before marriage.

11 Secondary female orgasmic dysfunction

Causes are: ● Relationship problems eg expectations in marriage, no communication. ● Bombed out working mother – physically too tired. ● Tired depressive housewife – especially after two children. ● Sexual technique. ● Alcohol.

Treatment: Treat cause, sensate focus exercises.

12 Vaginismus

Vaginal spasm which precludes intercourse – eliminate organic gynaecological causes under EUA, then other causes.

Causes: Religious and moral taboos – no experimentation in courtship; Painful experience – disastrous first night.

The husband must be present with you as he is witness to the scene we all know so well – when you attempt a vaginal examination on this poor girl, with her retreating from your attempted examination.

Don't persist. Get her to put a finger in her vagina and to leave it there a few seconds. She then removes her finger and then **she** guides and controls her husband's finger into her vagina, plus containment.

Let them practise this in your rooms followed by instructions to practise every night. Intercourse is obviously forbidden.

The following week – the same procedure with two fingers is used weekly till three fingers are comfortably inserted and contained.

Intercourse is then suggested, with wife in female superior position, controlling all the progress. □

PRODUCTS

Ethosuxamide and valproic acid equally effective in the treatment of absence seizures

Ethosuximide and valproic acid have been demonstrated to be equally effective in the treatment of absence seizures.

The double-blind, response-conditional crossover study (Neurology; 1982:32:157-163) was conducted at the Clinical Research Centre, University of Virginia in the USA and included 45 patients with absence seizures, ages ranging from 4 to 18 years, attending the Epilepsy Clinic at this Hospital.

The patients were divided into two groups: a group which was previously untreated with anti-absence drugs (new patients) and a group who was not responsive to currently available anti-absence drugs (refractory patients).

Each treatment period consisted of six weeks of therapy with valproic acid or ethosuximide, followed by crossover to ethosuximide or valproic acid.

Naive patients, who had 100% control, and refractory patients, who had at least 80% control, during the first six weeks of treatment were not crossed over to alternative treatment because of ethical concern for withdrawal of effective medication but were maintained on the same drug for three months in a double blind manner.

Twenty-three patients (Group I) received either valproic acid 15 to 20mg/day/kg with the dosage being increased to 30mg after five days if the 12-hour telemetered EEG still showed generalised spike-wave discharges, or 250 to 1500mg ethosuximide per day.

The next 22 patients (Group II) received valproic acid 12,5 to 20mg/day/kg with a dosage increase every two days for two weeks up to a maximum daily dosage of 60mg/day/kg. Patients in Group II given ethosuximide received 250 to 1500mg/day.

Anti-epileptic drugs for the treatment of other seizures were continued throughout the study.

After six weeks therapy with valproic acid, nine (75%) of 12 naive patients were free of generalised spike-wave discharges on the telemetered EEG. There was a general tendency toward a reduction of spike-wave discharge frequency, except for one patient in whom the frequency increased.

Of the the 11 patients treated with ethosuximide, six (54,5%) had no evidence of generalised spike-wave discharges on the telemetered EEG after six weeks therapy.

Most of the refractory patients were crossed over to the alternate therapy, but the difference in efficacy between valproic acid and ethosuximide was not found to be statistically significant.

First clinical study comparing acyclovir with vidarabine

The first clinical study comparing acyclovir with vidarabine has demonstrated these two ocular antivirals to be equally effective in the treatment of ulcerative herpes simplex keratitis.

"There is no statistically significant difference between the drugs in regard to mean healing time, efficacy of healing, development of deeper herpetic disease, post-treatment visual acuity, or adverse reactions," wrote American researchers D Pavan-Langston, J Lass and M Hettinger in the American Journal of Ophthalmology (92: 829-835, 1981).

In fact, they found both drugs to be highly efficacious therapeutically without significant toxicity.

The researchers conducted a double blind clinical study comparing 3% acyclovir with 3% vidarabine in 41 patients (18 women and 23 men, ages ranging from 16 to 82 years) with herpes simplex epithelial keratitis. Patients had either a first occurrence or a recurrence of dendritic or geographic keratitis with or without stromal keratitis or uveitis. No first occurrence infection had lasted longer than 14 days and no recurrent infection longer than seven days.

Patients received 1cm "ribbons" of either acyclovir (20 patients) or vidarabine (21 patients) ointment, applied to the inferior fornix every three or four hours (total: five applications each day for 14 days).

Seventeen of 19 (89,5%) of dendritic lesions in the vidarabine-treated group healed within a mean time of 5,1 days, while 16 of 17 (94,1%) of dendritic lesions in the acyclovir group healed in a mean time of 6,8 days.

The two geographic lesions treated with vidarabine healed in six days, while three geographic lesions in the acyclovir group healed in a mean timeof 3,7 days.

According to the authors vidarabine was 90,5% effective, while acyclovir was 95% effective. The difference is not statistically, they stated.