The executive health examination

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Summary
An executive health examination scheme adopted by a large South African company is described. In a large percentage of executives irregularities were discovered on examination. It is questionable whether an extensive procedure is necessary, either as a screening process or as a health education session. These abnormalities could have been detected by simpler procedures. Thorough follow-up of abnormalities found would be of greater benefit to both employer and employee than repeated examinations of the whole population.

An executive health examination scheme introduced in one of South Africa's major companies is described. The aim of this article is to show that such a scheme, which is the norm for most large South African companies, does not measure up to the expectations of the medical profession or of the business community.

Subjects and methods
The company under review has an office staff of 985 men and women. Fifty-three senior executives, all male, were eligible for the medical examination, which was entirely voluntary. Forty executives were examined. Of the 13 who were not examined 6 lived outside Cape Town, 4 had recently been examined by a physician of their own choice and did not wish to be re-examined, and 3 did not volunteer.

The findings were discussed with the patient, and his own physician and included an interview, a physical examination, which was entirely voluntary. Forty executives were examined. Of the 13 who were not examined 6 lived outside Cape Town, 4 had recently been examined by a physician of their own choice and did not wish to be re-examined, and 3 did not volunteer.

The initial examinations were carried out by an appointed physician and included an interview, a physical examination including a rectal examination, urinalysis and a stress ECG.

Special investigations included a full blood count and estimation of the ESR. A fasting blood specimen was taken for sugar, uric acid, cholesterol, triglyceride and high-density lipoprotein estimations. A chest radiograph was taken. These investigations were performed before the examination. It was planned to repeat these full examinations annually.

The findings were discussed with the patient, and his own general practitioner was informed of any abnormality which required further investigation or treatment. No member of the company other than the medical officer was given any information whatsoever.

Results
The mean age of the subjects examined was 43 years, with a range of 32 to 65 years.

History
No present or past illness of note was found in 28 of the subjects examined, and a history of serious disease (hypertension

REFERENCES
(4 cases), myocardial infarction (2), duodenal ulceration (2), hiatus hernia with dyspepsia, carcinoma, severe varicose veins and gross obesity) was elicited in 12. Appendicectomies and herniorrhaphies were not classified as indicating serious past illnesses.

Of the 40 men interviewed 10 were on some form of continuous medication. A steroid nasal spray for hayfever was used regularly by 4, and the rest used medication for hypertension or gout.

Habits

Fifteen men (38%) were cigarette smokers and another 2 pipe smokers. The rest had either never smoked or had given up the habit permanently.

Seventeen (42%) had an average of three or more drinks every day (a drink was defined as a tot of spirits, a beer or a glass of wine). Ten (25%) took no alcohol or less than one drink a day.

Regular physical exercise was undertaken by 13 (33%) of the men studied.

Examination

Judging by the statistics used by the South African insurance industry, 13 (33%) of the executives had a greater than 10% deviation from their expected weight for height and therefore had increased mortality ratings.

Hypertension (a blood pressure of over 145/90 mmHg) was found in 6 subjects, of whom 5 were obese. Three of these were newly diagnosed as mildly hypertensive, requiring regular observation only.

No other serious abnormalities were found on examination.

Investigations

Urinalysis was unremarkable in all cases. The full blood count revealed 2 subjects with abnormalities. One man with chronic bronchitis was polycythaemic, and another had neutrophilia and eosinophilia for which no cause could be found. The ESR was raised above 15 mm/1st h in 2 cases — no cause could be determined in either. The man with a carcinoma had a normal ESR.

Electrocardiography showed an old myocardial infarction in 1 case. The other subject with a history of myocardial infarction showed no abnormality on the ECG, even after effort. No other abnormalities were diagnosed on the effort ECGs.

Chest radiographs were all normal except for 1 diagnosis of pulmonary fibrosis, possibly due to asbestos. In 2 cases early obstructive airways disease, one in a non-smoker, was suggested.

The fasting blood sugar level was raised in 3 cases, the highest level found being 6.4 mmol/l (normal range for the laboratory 3.4 - 5.6 mmol/l). No further investigation or treatment was thought necessary in any of these cases. Fasting blood uric acid levels were raised in 3 cases, the highest level being 602 µmol/l (normal range for the laboratory 140 - 500 µmol/l). All these men were asymptomatic and no further treatment was prescribed.

Two men who were on maintenance therapy for gout had normal uric acid levels.

A raised triglyceride level was revealed by the lipogram in 7 cases. Of these men 6 were obese and 1 had not fasted properly. Serum cholesterol values were normal in all cases, and the mean high-density lipoprotein level was 0.8 mmol/l (range 0.7 - 1.0 mmol/l).

Overall the subjects’ histories and the results of examinations or investigations revealed a deviation from normal requiring medical advice or further observation in 22 (55%) of cases.

The cost of the complete examination, including all the special investigations, was R106.00 per person.

Discussion

In this survey a large proportion of the subjects had theoretically remediable abnormalities. The results obtained here differ from those of other surveys in which the prevalence of correctable findings found on screening has been commented on. Executives are known to suffer from stress diseases, hypertension and its consequences. The habits of excessive work, drinking, smoking and eating accompanied by the lack of exercise are occupational hazards.

The large number of anomalies found on history-taking and examination justifies an executive health scheme. The form of the present scheme is questionable, however. Before World War II the Americans started the extravagant fashion of admitting people to hospital for a few days every year for a complete ‘check-up’. The executive health scheme has evolved from this to the present procedure. I believe that an even simpler examination would be of equal value.

The abnormalities found in this survey were easily detectable. As a screening process for disease the present type of examination is not at all efficient. A screening process should ideally detect disease in its latent or subclinical form so that adequate treatment may affect the progress favourably. Numerous authors agree that only hypertension, obesity, metabolic diseases such as diabetes and gout, kidney disease and certain carcinomas fulfil this criterion. The screening process should be aimed at looking for these diseases and need not be sophisticated. Certain authors suggest that technicians or specially trained nurses are adequate for this task.

The main purpose of the examination is seen by some as a counselling session in which the dangers to health of bad eating, drinking, smoking and working habits are brought to the patient’s attention. The ability of the doctor to re-educate his patient in a consultation lasting an hour is doubtful. An experienced doctor will recognize that he is able to alter the established patterns of behaviour in only a small proportion of his patients. Health education is more effective if aimed at the population as a whole by experts in the fields of education and psychology, making use of techniques other than person-to-person contact. It is my distinct impression that none of the men seen in this survey have changed their habits significantly.

Improvement in health status depends on follow-up of abnormalities found rather than regular repetition of the executive medical examination. Emphasis should be placed on motivating executives to make a personal commitment to better health. Important here would be pressures brought to bear within the company by the executive’s peers who are striving, for whatever reason, to improve their health.

The medical profession must recognize the limitations of the educative health examination. The business community must be made aware of these limitations and the dangers of complacent reliance on the medical examination scheme to solve most of their health problems. Other methods of encouraging healthy living should be explored.

It is therefore recommended that the present type of executive health examination scheme, a costly and not particularly effective procedure, be reviewed.

Suggestions

The following suggestions are made to improve the effectiveness of the health scheme with increased benefits to the company and its employees:

1. A basic examination should be performed on engagement. Periodic examinations thereafter should be left to the discretion of the company medical officer but will depend on the finding of abnormalities. The Kaiser-Permanente study which has now followed up patients for 11 years has recommended that the annual examination be abandoned. It is now accepted that a
Miliary tuberculosis of the liver — another cause of the ‘bright liver’ on ultrasound examination

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Summary

Grey-scale ultrasound scans of the enlarged liver in 8 patients with proven miliary tuberculosis of the liver showed a bright echo pattern indistinguishable from that seen in cirrhosis and from that due to other established causes of increased hepatic echogenicity.

The concept of the ‘bright liver’ on ultrasound scanning, introduced by Joseph et al.\(^1\) in 1979, has focused attention on the varying conditions that produce the phenomenon, including cirrhosis (especially micronodular cirrhosis), fatty infiltration, portal tract fibrosis, hepatitis, congestive cardiac failure\(^2\) and lymphoma.\(^3\) We have observed a similar echo pattern in patients with miliary tuberculosis of the liver.

Patients and methods

Single-sweep scanning\(^4\) of the upper abdomen was performed in the longitudinal, transverse and oblique planes, using a Kretz CombiSon 200 grey-scale static machine. The usual settings of time-gain control were employed with collimated 2,0 and 2,5 MHz probes.

In 8 patients with proven pulmonary miliary tuberculosis and hepatomegaly on clinical examination, ultrasonography showed increased echogenicity of the liver (Figs 1 and 2) and spleen. Posterior attenuation was demonstrable. Liver biopsy in each case showed the presence of miliary tuberculosis, without evidence of fatty infiltration or cirrhosis. A technetium-99m radioisotope scan of the liver of one of the patients (who was well enough to be referred to another hospital for the procedure) showed patchy uptake in the liver and shunting of isotopes to the spleen and bone marrow, identical to that seen in cirrhosis.

Discussion

The cause of the increased hepatic echogenicity in patients with cirrhosis is presumed to be the relative increase in collagen in the