borderline cases of diabetes and will require careful follow-up. Of the other cases of non-diabetic glycosuria 25 were classified as renal glycosuria, 27 as transient glycosuria, seven were children and were unclassified, and nine did not have blood examinations performed. One case was found to have hyperglycaemia without glycosuria on a glucose-tolerance test. The significance of these cases is discussed, and it is concluded that all will require reassessment at a later date.

The inference drawn from the study is that the number of undiagnosed diabetics present in the population is large enough to warrant the routine testing of urine for glucose, especially in the older age-groups. It is suggested that large-scale diabetes-detection drives should be started in this country on the same lines as in the United States.

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The Ministry of Health booklet, *The Feeding of Children from One to Five Years*, which has sold over 3,000 copies a year since it was first issued in 1942, is now available in a revised edition (H.M.S.O., price 1s.). It has been designed mainly to help those in charge of groups of young children to plan and prepare balanced, attractive, and varied meals. For this purpose, recipes in it are based on ingredients for ten children. There is, however, much general advice on the feeding of the under-fives, and on their emotional as well as their nutritional needs in the building of good health and good habits.

DEVELOPMENT OF CHEST PAIN IN MUNCHAUSEN'S SYNDROME

BY

M. A. PEYMAN, M.A., D.M., M.R.C.P.

Charing Cross Hospital, London

Pain in the chest of cardiac distribution is one of the less common symptoms of patients with Munchausen's syndrome. When, however, it has occurred, electrocardiographic changes indicating myocardial ischaemia have sometimes been found (Davidson, 1953; J. C. Barker, 1959, personal communication). In the case of a patient with Munchausen's syndrome reported below, the diagnosis of an acute myocardial infarction was repeatedly made on the basis of recurrent attacks of cardiac pain and certain electrocardiographic changes, though, in fact, the electrocardiographic pattern was that of the sickle-shaped R-T plateau type (Bedford and Thomas, 1954), a physiological variant usually associated with perfectly good health.

Case History

The patient was born in 1918. At different times he claims to be employed either as a clerk or as a publican. Since 1953, using one of two names, he has attended at least 16 hospitals in England and Scotland. His usual story is that of severe gripping pain situated across the front of the chest on both sides and often radiating up to the neck and down the left arm. The pain develops about half to one hour beforehand while he is walking or lifting heavy weights, etc. Physical examination is usually negative apart from showing an emphysematous type of chest. At times, however, he has sweated profusely, and on one occasion there was a fall in blood-pressure to 95/60 mm./Hg. Almost always electrocardiography is performed, after which a diagnosis of an acute myocardial infarction is often made and he is treated accordingly in hospital with bed rest, sedatives, and anticoagulants. Sometimes the electrocardiographic changes are not considered to be typical of acute coronary artery disease, but in view of the history of chest pain he is admitted to hospital for further observation. On one occasion, however, the casualty officer at a certain hospital did not accept his story of pain in the chest even though he was dyspnoeic; after a complete physical examination, which was negative, the patient was discharged from hospital without electrocardiography or any further ado.

When the patient is admitted he is at first extremely plausible (he often gives a graphic account of his wartime exploits in the R.A.F., claiming to have taken part in the Moehe Dam raids), but subsequently he becomes very objectionable, especially towards the nursing staff, and almost invariably takes his own discharge against medical advice within a period of several days to a few weeks. While residing in one hospital he had several bouts of chest pain associated with sweating and hypotension for which he received numerous injections of morphine until it was realized that he was becoming addicted to this drug. At the same hospital he cut his wrists with a razor-blade, but his wounds were superficial and it was considered that the gesture was a psychopathic one rather than a true suicidal attempt. During all his visits to hospital he has remained afebrile (except on two occasions), and the white-cell count and erythrocyte sedimentation rate have been normal.

Occasionally he presents at hospital with other symptoms such as headache, vertigo, or pain in the right testis (recently he was explored for a supposed torsion of the testis but no abnormality was detected apart from the presence of a hydrocele). In February, 1959, he attended the out-patient department of Charing Cross Hospital with

a history of frontal headaches during the previous six months. At that time the blood-pressure was 120/85 mm. Hg, the heart sounds were normal, there were no signs of cardiac failure, and the retinal and other vessels appeared healthy. The urine was free of sugar and albumin. The other systems were also normal apart from an appendectomy scar. The haemoglobin was 14.2 g./100 ml., the serum W.R. was negative, and the serum cholesterol was 200 mg./100 ml. The latter estimation had been performed two months previously at another hospital. It was decided to refer him to the psychiatric department, but he fled from the hospital before an appointment could be made.

Discussion

The sickle-shaped R-T plateau type of electrocardiographic pattern is perhaps not so well recognized as it should be outside cardiological centres. It consists of an elevated R-T segment with an upward concavity terminating in a high positive and sharply peaked T wave. The lowest point of the dipped R-T segment is closer to R than to the summit of T. In addition, the QRS complex is predominantly positive, there is frequently a well-marked Q wave, and the downstroke of R is notched, slurred, or may show an R'. These changes are seen mainly in lead I or III as well as in the left chest leads. In contrast to acute cardiac infarction, reciprocal R-T displacement never occurs. Another point of distinction is that the RS-T segment which develops after an acute myocardial infarction is usually either straight or has an upward convexity—that is, cove-shaped. The sickle-shaped plateau curve must also be distinguished from the electrocardiographic changes which accompany pericarditis. In the latter condition, however, the RS-T segment may return to normal within a few days, and later on the T waves may become inverted. Moreover, the electrocardiographic changes associated with pericarditis are likely to be more widespread than in the case of the sickle pattern.

Bedford and Thomas stated that the sickle pattern is a non-specific one seen most commonly in subjects with good health. Occasionally, it is found in athletes and subjects with vagotonia or in patients with an effort syndrome liable to fainting attacks. Rarely it may be present in cases of coronary artery disease. The electrocardiograms of the patient under discussion (see Fig.) indicate that this sickle pattern is present in leads

II and III and AVF as well as in some of the left chest leads. Furthermore, all the tracings are virtually identical, even though they were recorded over an interval of several years. If, in fact, the patient had sustained repeated episodes of acute coronary occlusion or pericarditis the pattern of the electrocardiogram would have undergone considerable alteration during this period.

Though it is considered that the electrocardiographic pattern of this patient is an example of the sickle-shaped R-T plateau curve as described by Bedford and Thomas, it must be stated that one cardiologist to whom these records were shown maintained that they displayed evidence of coronary arterial disease with signs of a limited infarction. This opinion was based on the presence of significant Q waves in leads II, III, and IIIr, the occurrence of low T waves in certain leads, depression of the T-U segment in CR4, and the appearance of a notch in CR7. This observer agreed that the sequence of events associated with the patient indicated that his symptoms were predominantly functional.

Apart from the electrocardiographic evidence, there are other reasons for viewing with suspicion the account given by this patient. Though the incidence of myocardial infarctions in young male adults may well be increasing, it must be unusual for a man in his late thirties to have such a rapid succession of acute coronary occlusions within a period of five years or so, especially in the absence of any predisposing cause such as diabetes mellitus or primary hypercholesterolaemia. Indeed, it is highly unlikely that any patient, irrespective of age or sex, would have survived under these circumstances. Another point is that though this patient occasionally displayed sweating and fever, and even, on one occasion, a fall in blood-pressure, there was never any other circumstantial evidence in favour of the diagnosis of an acute myocardial infarction such as signs of heart failure or an increase in either the white-cell count or erythrocyte sedimentation rate. As Todd (1959) has emphasized, all the available facts should be considered before the diagnosis of cardiac infarction is made in a patient complaining of pain in the chest. Finally, the curious mixture of speciousness and truculence culminating in self-discharge from hospital are forms of behaviour which have been seen not only in this patient but also in others afflicted with Munchausen's syndrome.

According to A. Small (1959, personal communication), patients with Munchausen's syndrome differ from malingerers and exhibitionists in that their attitude and symptoms are permanent rather than intermittent. Small further considers that Munchausen's syndrome is usually associated with organic disease, the treatment of which is often unsatisfactory. Occasionally the syndrome may be associated with developmental lesions such as opaque nerve fibres around the optic disk (Heathfield, 1957), or, as in this patient, a sickle-shaped R-T plateau electrocardiographic pattern. Any initial confusion in the diagnosis of such anomalies, provided it is obvious enough to the patient, may act as a trigger mechanism in certain susceptible individuals with an underlying psychopathic constitution and lead to the development of the syndrome. In this respect, Barker (personal communication) agrees that the condition is often iatrogenic, while Clyne (1955) has even suggested that the name Munchausen should be replaced by the term "misdiagnosis." In any event, a certain degree

Some examples of the electrocardiograms, showing the sickle-shaped R-T plateau pattern recorded in this patient between 1953 and 1959.

of medical knowledge on the part of the patient would seem to be a prerequisite for development, even though Barker and Grygier (1958), among others, have encountered the condition in a subject with mental deficiency. In addition, it is likely that other factors such as illegitimacy (Grant, 1952) and drug addiction (Todd, 1951) play a part in some cases.

The reasons for the development of the syndrome in the case described here remain uncertain, though it is reasonable to suppose that the professional apprehension shown after the initial electrocardiogram was duly recognized by the patient and taken advantage of on subsequent occasions. Unfortunately, it has not been possible to discover whether electrocardiography was performed before December, 1953 (the first available record). It is conceivable, of course, that electrocardiography was originally carried out on account of genuine cardiac pain associated with a small coronary occlusion or acute pericarditis. Whether or not this was so, the possession of a sickle-shaped R-T electrocardiographic pattern has enabled the patient to simulate organic heart disease on numerous occasions during the past five years. It is certainly regrettable that the psychopathic origin of such behaviour is likely to prove a stumbling-block in his management and treatment in the future.

ADDENDUM.—After exercise the S-T segment of the sickle-shaped R-T plateau pattern returns to the isoelectric line. For this reason, if this patient attends other hospitals in the future it would be of interest to perform electrocardiography before and after exercise.

I thank those cardiologists who have kindly given their valuable advice regarding the interpretation of the electrocardiograms of this patient. I would also like to acknowledge the help given by the medical staff of the numerous hospitals which this patient has attended.

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Steady progress is being made in the campaign to rid Scotland of smoke, and clean-air exhibitions have recently been opened in Glasgow and Edinburgh. The Clean Air Council for Scotland—of which Sir DAVID ANDERSON is chairman—has been told that 26 town and county councils have already made smoke control orders or are considering making them. Altogether 90 local authorities have been urged to set up smoke-controlled areas. Arrangements are being made for appeals to householders in smog-prone areas to burn smokeless fuel or to use gas or electricity when conditions become bad. It is known that about half the smoke-polluting air comes from household fires. Some of this comes from the lighting of fires, and the council is having a new smokeless firelighter tested by its technical advisers. The possibility of an electrical firelighter for use in houses where there is no gas is also being studied. Another problem being examined is the effects of fumes from buses and other motor vehicles. The Clean Air Council for Scotland is in touch with the Clean Air Council for England and Wales in the whole field of smoke control.

INFANTILE SCURVY

BY

M. K. STRELLING, M.B., D.C.H., D.Obst.R.C.O.G.

Late Paediatric Senior House Officer, Morriston Hospital, Swansea

That dietary deficiency of vitamin C remains a possibility is emphasized by instances of overt scurvy which, exceptionally, do still occur. The following examples in infants and children have been reported from England and Wales in the last decade.

Six out of 10 cases seen at the Hospital for Sick Children, Great Ormond Street, in 1947–9 were in mental defectives aged 23 months to 4½ years who were cared for at home by their parents. Their diet, perforce liquid or semi-solid, was mainly milk, custard, cereals, milk puddings, cakes, biscuits, and tea. Vegetables were refused, and orange juice was either refused or vomited and discontinued, or never offered (Beynon and Evans, 1951).

Derham (1950) describes the case of a 10-year-old girl who, in addition to a history of tuberculous peritonitis with prolonged diarrhoea, had perverse eating habits to which much attention had been paid, refusing fruit, green vegetables, milk, and potatoes.

Baber (1953) reports two cases. One patient at 9 months was still on cow's milk and cereal. Orange juice had caused vomiting and had been discontinued early. The other developed scurvy at 4 months while in hospital with gastro-enteritis, having had orange juice for two weeks only.

From a population of 250,000 in Cornwall, seven further cases were seen by Howells *et al.* (1954). These babies of 7 to 12 months had been fed on boiled cow's or National dried milk since birth; none had had solids, and six had not had orange juice.

Reports of adult scurvy appearing in the same period (Riches, 1954; Dewhurst, 1954; Hughes and MacLennan, 1954) confirm Cutforth's (1958) finding that they fall predominantly into two groups: (1) old men living alone, failing to feed themselves properly; and (2) those whose rigid diets, usually for peptic ulcer, exclude fruit and vegetables (save mashed potato) for periods of a year or more. One woman of 64 had had little but tea, sugar, beef extract, biscuits, bread, butter, and paste for 26 years (Glyn and Campbell, 1957).

Case Report

Scurvy in this child is reported because he was receiving a normal diet in an institution in which regular vitamin C supplements were given.

A boy of 15 months was admitted to hospital in 1958 with a painful swelling of one leg; diagnosis? osteomyelitis. Since he was 2 weeks old he had been in a pleasant home for deprived children run by nuns under medical supervision. Details of family and birth are unknown.

Previously normal, he had been listless for a fortnight with a swelling of his right thigh, and for five days he screamed on being handled. The sister, noting his gums to be swollen and to bleed, had in fact given him extra rose-hip syrup for two weeks. His appetite, usually good, had been poor for two days.

On examination he was fairly well covered, pale, and fretful, with a temperature of 101.8° F. (38.8° C.). He kept his right leg still in the classical "frog position"—that is, externally rotated and moderately flexed at hip and knee.