Clinical Notes and Cases.

PELLAGRA IN RECENT PSYCHOSES.

By D. N. PARFITT, M.D., M.R.C.P., D.P.M.,
Medical Superintendent, Warwickshire and Coventry Mental Hospital.

A RECENT review by Stannus and Gibson (1) establishes the rarity of pellagra in Great Britain, and an account of two cases occurring at the same time in a mental hospital may be of interest. Up to the time of the article by Stannus and Gibson something over 100 cases had been recorded and a great proportion of them occurred in mental hospitals, frequently in chronic patients, and it was therefore often difficult to decide if the disease attacked psychotics, or whether the pellagra had been prominent in the ætiology of the psychosis. The improvement in hospital dietaries should make the development of the disease more and more rare, and there is good reason to believe that in both the following cases the disease developed before admission and was instrumental in producing the mental breakdown.

The widespread incidence of the disease found in other countries is undoubtedly a result of economic hardships, and a general improvement in food supplies is the best means of controlling it, as pointed out by Wheeler and Sebrell (2). They quote Goldberger, who reduced the death-rate from pellagra in one of the largest State asylums in the Southern States of America from 6·2 to ·1% by the introduction of an improved diet. It is the quality of the food that counts, for the disease may develop with an adequate caloric intake (3). Vitamin B2 deficiency holds pride of place at the moment in the ætiology (4, 5), but it is felt that this does not represent the whole truth, and additional factors have been suggested, acting together with vitamin B2 deficiency, such as shortage of first-class protein and essential amino-acids and of fat (3), cholesterol and vitamins A and D (6). The toxicity of maize in the causation still finds support (5, 6), but Lowe (3) has reported cases where the consumption of maize was extremely low. Chick (5) suggests photosensitivity as an adjuvant factor, and Sabry (7) postulates a toxin arising from hyperpigmentation, probably a dioxyphenylamine, while Simpson (8) considers that the development of the disease bears a relation to adrenal hypofunction. The frequency of achlorhydria in pellagrins has been stressed by Holst (9) and Guthrie (10).

https://doi.org/10.1192/bjp.82.339.440 Published online by Cambridge University Press

The disease is much commoner in women, especially middle-aged women, 4 being affected to each man, according to Lowe (3), while in the Great Britain series (1) there were 111 women to 20 men. Both patients reported here are middle-aged women.

Most of the cases found outside mental hospitals in this country have followed disease of the gastro-intestinal tract, carcinoma of the stomach, gastrectomy, tuberculous strictures, entero-colitis, prolonged diarrhœa, etc., and such cases have been reviewed by Simpson (8) and Holst (9), and Boggs and Padget (11) describe many cases following chronic alcoholism. Holst has also reported a case in a young labourer of 24 where the disease arose following a diet of bread, margarine and coffee, and whose previous health had been excellent, and the same author describes cases secondary to mental disease and refusal of food.

The disease takes a variable time, often years, to develop, frequently with exacerbations each spring or early summer. Boggs and Padget state that the commonest effect is the dermatitis, followed by achlorhydria (90%), anæmia (80%), sore mouth (75%), diarrhœa (75%), mental changes (50%), and subacute combined degeneration of the cord (45%), in order of frequency.

The skin changes commence as an erythema on the dorsal surfaces of the bases of the thumbs and first fingers (12), which spreads to all skin areas exposed to the sun's rays, the face and neck, the backs of the hands and forearms, and the dorsum of feet. When first observed the skin may be dark and rough from previous attacks of inflammation. The initial erythema resembles a severe sunburn, but it persists longer, the skin thickens, and desquamation and exfoliation are followed by deep pigmentation with a prominent raised edge, the hyperkeratotic border of Merk. Languor, weakness and anorexia with loss of weight are common in the early stages. Sore mouth often precedes the skin changes (12), the tongue being coated, with enlarged red papillæ at the margins. Stomatitis and glossitis may proceed to a severe spreading ulceration. A history of attacks of diarrhœa may be given, and they are apt to recur and may persist a long time. Marked asthenia and low blood-pressure follow.

The commonest mental change is depression, sometimes with suicidal tendencies, accompanied by a heaviness and a sad crying, but excitement, delirium and stupor have been described (11). Symptoms of subacute combined degeneration of the cord may be evident, and are well described by Langworthy (13), but they are not essential to the diagnosis. Lowe (3) says that nervous and mental symptoms were not marked in his cases.

The prognosis varies considerably, the death-rate ranging from 3–40%. Stannus and Gibson (1) draw attention to the high death-rate of cases reported from mental hospitals, and Guthrie (10) says the outlook is good if acid is present in the stomach.

Vitamin B2 is the sheet-anchor of treatment.

https://doi.org/10.1192/bjp.82.339.440 Published online by Cambridge University Press

Boggs and Padget give liver, Guha (4) liver and marmite, Gupta (14) marmite, Lowe (12) yeast and plenty of meat. The vitamin is plentiful in yeast, marmite and liver. Intravenous sodium thiosulphate, 10 c.c. of a 10% solution daily for 20–60 doses, is recommended by Sabry (7) and Chick (5).

CASE 1.—F. H. F—, female, æt. 37, admitted January 15, 1935. On admission she was depressed, dull and confused, sometimes crying quietly for no apparent reason. She expressed fragmentary delusions of sin and persecution, but was too confused and retarded to give intelligent replies to questions.

She was fairly well nourished. Dark, thick, rough skin and half-closed eyelids gave a general heavy appearance. The blood-pressure was 90/70, the tendon-jerks were exaggerated; she had several carious teeth and large, septic tonsils. The urine contained an occasional trace of albumen; she was achlorhydric to alcohol and hypochlorhydric to histamine.

On February 4, 1935, the carious teeth were extracted. From February 7 to March 6, 1935, she had a course of weekly intravenous injections of T.A.B. vaccine (doses of 10, 20, 40, 100 and 400 millions of mixed bacilli). Reactions were poor, the highest temperatures averaging 99·8° F. On March 21, 1935, tonsillectomy under general anæsthesia was performed. Apart from the operative period and during injections she had been nursed on an open verandah, but her condition had steadily deteriorated. She had become increasingly difficult with food, had lost weight steadily, was almost stuporose, and her mouth was dirty, of bad odour and very difficult to keep clean. She had had two attacks of diarrhœa, but neither was severe or prolonged enough to give rise to much anxiety. Because of an acute development of erythema on the face, neck and hands she was transferred to a dormitory, and tube feeds were commenced twice daily on April 1, 1935. Despite the feeds, which each contained one teaspoon of fresh yeast, although pellagra was not suspected, the patient went downhill. The mouth condition progressed to ulceration with numerous foul sloughs, the acute erythema had subsided, but the features looked bloated and thickened and subacute inflammation and desquamation were present. An irregular pyrexia had commenced with the temperature fluctuating between normal and 102° F., while stupor and emaciation increased. On April 20, 1935, pellagra was diagnosed, and on examination she proved to be a text-book case, if subacute combined degeneration be excepted. The rash was typical, the hyperkeratotic border of Merk was well marked around the base of the neck and across the backs of the forearms about 1 in. above the wrists. Diarrhœa had again occurred, achlorhydria was present, so was anæmia, and the mouth was still foul. Moreover the mental changes represented the commonest variety following pellagra and she was a middle-aged woman, the most likely class of patient. The yeast was increased to one and a half ounces daily, no other change being made in the treatment, and improvement was dramatic in

https://doi.org/10.1192/bjp.82.339.440 Published online by Cambridge University Press

its rapidity. By May 11, 1935, the skin, though rough, dry and pigmented, had improved strikingly, the mouth was healing satisfactorily and the general condition was distinctly better, while the temperature was always normal. On May 21 she suddenly collapsed with acute epigastric pain. A tentative diagnosis of coronary thrombosis was made and morphine administered, but she died in 5 hours.

Post-mortem.—A small stone was found impacted in the common bile-duct and there were about a dozen other small stones in the gall-bladder. Nothing else of note was found.

CASE 2.—E. N—, female, æt. 52, admitted March 27, 1935, as a voluntary patient.

History.—Menopause about ten years before.

In May, 1934, she complained of a sore tongue and became mildly depressed and anxious, lost her appetite and began to lose weight. Her doctor says that she suffered from a cancer-phobia. He recommended a light diet, mainly cool fluids taken through a straw. By July she was very depressed and her bowels were irregular, constipation alternating with diarrhœa, while the tongue, according to the husband, "looked terrible". Anorexia, listlessness and depression increased and the weight fell from 10½ to 7 st. In October there was a definite improvement, and advantage was taken of this to have all the teeth out. The winter passed satisfactorily, but in early March, 1935, there was a relapse into acute depression, and the symptoms were all intensified, delusions of persecution and danger being expressed freely. Sleep was poor, appetite absent, and she became apathetic and wasted.

On admission she was poorly nourished and the skin of the face and neck was noted as being dark and unhealthy, but little importance was attached to this. The tendon-reflexes were exaggerated, and the blood-pressure varied from 100–115 systolic, 80 diastolic. There was slight anæmia, hæmoglobin 80%. The urine was clear and an alcohol test-meal gave a normal curve, but there was fasting achlorhydria.

She was nursed on an open verandah, and weekly injections of T.A.B. vaccine were given intravenously for five weeks from May 1 to May 29 in doses of 10, 30, 40, 60 and 100 mixed bacilli. The highest temperatures averaged 101·6° F.

Early in June an acute erythema commenced on the face, neck, backs of the hands and dorsum of feet. She had been sitting in the sun in a dressing-gown and sandals and acute sunburn was diagnosed, although no other patient was affected, and surprise was aroused that her dark skin should be so easily inflamed. She was transferred to a hut and kept strictly in the shade, suitable lotions being applied. The inflammation grew worse, and a definite edge was noticed to the rash. Pellagra was diagnosed, and fresh yeast, one and a half ounces daily, added to her food. The subsidence of inflammation,

https://doi.org/10.1192/bjp.82.339.440 Published online by Cambridge University Press

desquamation, thickening and pigmentation followed, the hyperkeratotic border of Merk developing in a very striking manner.

Although all evidence of pellagra had disappeared she remained somewhat unstable, mildly depressed and easily fatigued in February, 1936, and in view of the poor results reported in cases in this country and the marked tendency to relapse in later spring seasons, it was decided to postpone her discharge from hospital until later in the year.

Of these two cases the second is not so clear-cut as the first, but it seems reasonable to presume that the disease had commenced in both patients before admission, and that the psychosis in each case was intimately connected with the pellagra. Neither patient had received sulphonal or trional.

The striking benefit following large doses of fresh brewer's yeast, 1½ oz. daily, is noteworthy, and the cases suggest that the disease is not so rare as might appear from the paucity of recorded material.

My thanks are due to Dr. H. B. Leech for permission to record the notes of these cases.

References.—(1) Stannus, H. S., and Gibson, C. R., *Quart. Journ. Med.*, 1934, iii, p. 211.—(2) Wheeler, G. A., and Sebrell, W. H., *Journ. Amer. Med. Assoc.*, 1932, xcix, p. 95.—(3) Lowe, J., *Ind. Med. Gaz.*, 1931, lxvi, p. 491.—(4) Guha, B. C., *Brit. Med. Journ.*, 1931, ii, p. 53.—(5) Chick, H., *Lancet*, 1933, ii, p. 345.—(6) Corkill, N. L., *ibid.*, 1934, i, p. 1390.—(7) Sabry, P., *ibid.*, 1931, ii, p. 1020, and *Journ. Trop. Med. and Hyg.*, 1931, xxxiv, p. 303.—(8) Simpson, S. L., *Quart. Journ. Med.*, 1935, iv, p. 19.—(9) Holst, J. E., *Hospitalstidende*, 1935, lxxviii, p. 713.—(10) Guthrie, J. B., *Journ. Trop. Med. and Hyg.*, 1932, xxxv, p. 71.—(11) Boggs, T. R., and Padget, P., *Bull. Johns Hopkins Hosp.*, 1932, i, p. 21.—(12) Lowe, J., *Ind. Med. Gaz.*, 1933, lxviii, p. 379.—(13) Langworthy, O., *Brain*, 1931, liv, p. 291.—(14) Gupta, P., *Ind. Med. Gaz.*, 1935, lxx, p. 148.

https://doi.org/10.1192/bjp.82.339.440 Published online by Cambridge University Press