(12,500) with definite toxic changes evident in the granulocytes. The picture reverted rapidly to normal on withdrawal of the drug.

My thanks are due to Dr. J. Shee, of Bulawayo General Hospital, for details of the patient's progress whilst under his care.

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REFERENCE

Whitby, Sir L. E., and Britton, C. J. (1950). *Disorders of the Blood*, 6th ed., p. 377. Churchill, London.

A Case of Recurrent Infectious Mononucleosis

More than one attack of infectious mononucleosis, with prolonged periods of good health in between, appears to be very uncommon. Bernstein (1940), in his review of the disease, lists five instances of recurrence, in only one of which, that of De Vries (1938), was the diagnosis confirmed by the Paul-Bunnell reaction. Here the patient had initially an icteric type of illness which was followed a year after recovery by an episode of glandular enlargement with fever. The Paul-Bunnell reaction was strongly positive in the second illness. As that test was not done on the first occasion, it seems that the possibility of this case being infective hepatitis is not entirely excluded.

Search of the more recent literature has revealed only one other probable case with repeated attacks (Rugg-Gunn, 1954). This patient ran a fever and had enlarged glands at the age of 6 years, but was not then investigated haematologically. When 14 he showed enlargement of the glands of the neck, had his blood examined, and was labelled "glandular fever." When he was 20 he complained of malaise, headaches, and lumps in the neck. Lymph nodes were palpably enlarged in the cervical, inguinal, and epitrochlear regions, the last being also tender. His white-cell count gave a total of 8,400 per c.mm. (28% neutrophils, 72% lymphocytes). The Paul-Bunnell reaction on this occasion was positive to a titre of 1 in 112 on admission.

The following case report is of a young man who has had three attacks of infectious mononucleosis in seven years and in whom the diagnoses have been supported by laboratory evidence.

CASE REPORT

At 4 years of age the patient had tuberculous cervical adenitis, which was treated conservatively; at 7 he had a second attack, this time treated surgically and followed by three years of modified sanatorium regime at home. At 14 he had symptoms of infectious mononucleosis. The white blood picture was said to be suggestive of the disease and the Paul-Bunnell reaction to be positive. A white blood cell count at 17 was normal. The next year, when 18, he had a second attack of glandular fever while serving in the Royal Air Force. This was again confirmed by the characteristic blood picture and a positive Paul-Bunnell reaction.

In March, 1954, the patient, then aged 21, was seen by one of us complaining of lassitude, anorexia, sore throat, and painful, tender, and enlarged lymph nodes in the neck, all lasting for a week. On examination he was found to have a temperature of 99.6° F. (37.6° C.), slight faucial injection with post-nasal discharge, and enlargement of lymph nodes in both anterior and posterior triangles of the neck, both axillae, both groins, and both epitrochlear regions. A diagnosis of infectious mononucleosis was again made. The laboratory findings were as follows: E.S.R., 1 mm. in 1 hour; Hb, 91% (Haldane) (13.3 g.%); P.C.V., 46%; W.B.C., 8,200 per c.mm. (neutrophils 21.6%, lymphocytes 74.8%, eosinophils 0.8%, basophils 0.8%, monocytes 2%). The Paul-Bunnell test was positive. In view of this unusual history the patient was admitted to hospital three weeks later in order to exclude the possibility of diffuse hyperplastic tuberculosis or early lymphomatous change. X-ray examination of the chest was normal.

The laboratory tests were repeated. The findings now were: Hb, 102% (Haldane); P.C.V., 46%; W.B.C., 7,400

per c.mm. (neutrophils 47%, lymphocytes 41%, eosinophils 3%, monocytes 9%, a few of the lymphocytes showing characteristic atypical features). The Paul-Bunnell reaction was still positive. The screen test became positive in five seconds. The titre of the unabsorbed serum in the test proper was positive at 1 in 512 and negative at 1 in 1,024. When absorbed with guinea-pig kidney, the serum titre was 1 in 640, whereas it dropped to zero after absorption with ox cells. A biopsy was carried out on a cervical lymph node. Histologically this showed considerable and slightly atypical follicular hyperplasia, together with a moderate increase of the interfollicular tissue. The normal nodal architecture was little disturbed. The cells partaking in the hyperplasia appeared in the main to be immature lymphocytes. There was a slight stem cell increase, but reticulin formation was within normal limits. There was no evidence either of tuberculosis or of malignant lymphoma.

Recovery from the illness was slow, and a return to work was delayed for six weeks from the onset. Eight months later the patient was examined again and found to be very fit. The differential white count was: neutrophils 60%, lymphocytes 30%, monocytes 8%, eosinophils 1%, basophils 1%. Occasional lymphocytes showed atypical features. The Paul-Bunnell screen test was negative, and the serum titre was positive only to 1 in 8 in the full test.

COMMENT

This patient has had three attacks of infectious mononucleosis over seven years. Unfortunately, figures are not available for the blood counts and Paul-Bunnell tests of the first two attacks, but the patient is a reliable and intelligent witness, and the Royal Air Force authorities have confirmed that the second attack was genuine. The patient appeared to be well in between the attacks, and this is supported by normal white-cell pictures between the first and the second attack and after the last one.

This phenomenon appears to be quite rare. Isaacs (1948) gives an account of what he terms chronic infectious mononucleosis in which three patients are mentioned who had symptoms for at least six years. The patients complained of persistent fatigue, showed 1-7% abnormal lymphocytes in the white count, but the Paul-Bunnell reaction was never above 1 in 64. It is a little difficult to accept these as genuine cases of the disease in view of the low Paul-Bunnell titre, and as a small number of atypical lymphocytes can be found in many people with different and often minimal physical signs and symptoms.

The only case that has been discovered in the literature, in which recurrences have been of similar order as ours, is that of Rugg-Gunn (1954), which has been described above.

Infectious mononucleosis is believed to be a virus infection, though this virus has not yet been isolated. The inability to demonstrate contact infection in the great majority of cases of this disease is interpreted as being due to the low infectivity of the virus. The rarity of a second attack could be due to the formation of acquired immunity, though it could as well be explained entirely on the basis of the low infectivity or natural immunity. In the latter case, recurrences such as reported in our patient would be due to a higher individual susceptibility than is the case for the normal person. In this connexion it is of some interest that our patient had previously had tuberculous inflammation of the cervical lymph nodes.

The haematological investigations in the earlier part of the last attack were carried out by Dr. D. H. Fulton, to whom our thanks are due.

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REFERENCES

- Bernstein, A. (1940). *Medicine (Baltimore)*, 19, 85.
De Vries, S. I. (1938). *Acta med. scand.*, 95, 552.
Isaacs, R. (1948). *Blood*, 3, 858.
Rugg-Gunn, M. A. (1954). *Proc. roy. Soc. Med.*, 47, 759.