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These notes concern cases admitted to a General Hospital in Brunswick. The first appeared in September and there was a steady increase in number up to the end of October when the incidence diminished and, by mid-December, the frequency was down to three cases per week. The following relates to the October-November epidemic group of 84 cases recognized on haematological grounds.

The age incidence was of no statistical significance in an Army community.

CLINICAL GROUPS.

Anginose, 77 cases; abdominal, 3 cases; thoracic, 2 cases; with hepatitis, 2 cases.

The frequency of the major physical signs was: general glandular enlargement, 12 cases; local glandular enlargement (usually cervico-axillary), 72 cases; spleen palpable, 7 cases; evanescent maculo-papular rash, 2 cases; jaundice, 2 cases.

Clinical Aspects.—Sore throat was the complaint in 77 cases out of 84. Not infrequently a history of repeated mild sore throat was given. Malaise was often absent and fever was slight and sometimes absent. The throat lesions included pharyngitis, follicular tonsillitis and occasionally a friable membrane. The duration was two to four days. All were swabbed and the findings were: heavy Vincent’s infection, 1 case; scanty Vincent’s infection, 5 cases; S. hæmolyticus, 8 cases.

Abdominal Types, 3 cases.—Two had slight fever and lower abdominal discomfort. Glands became palpable later. The third was enteric in type and had three weeks’ fever (99-101) and a leucopenia of 2,400. At first the blood picture was lymphocytic but, later, atypical cells appeared and glands became palpable.

Thoracic Type, 2 cases.—One presented with pleuritic pain, cough and dyspnœa suggesting pneumonia but the blood picture and later appearance of glands gave the correct diagnosis.

The second had pyrexia and signs suggesting pericarditis and pleurisy. The blood picture was diagnostic. (WBC 4,600 with 33 per cent of atypical cells.) Both these cases recovered in a few days.

Hepatitis.—Two cases clinically resembled infective hepatitis but the blood picture was diagnostic. (WBC 9,600 with 26 per cent of atypical cells and WBC 11,600 with 50 per cent of atypical cells.)
Relapse.—Only one true relapse was noted but several complained of not feeling quite fit after a month.

The Blood.—The total leucocyte count averaged 8,000 with extremes of 2,400 and 24,600. The greatest percentage of atypical cells was 84.

The atypical cells are lymphocytes and the changes are both nuclear and cytoplasmic. The nucleus enlarges, the chromatin rarefies and indentation progressing to lobulation occurs. Nucleoli are uncommon and mitoses rare but the latter were found in four cases of this series. The cytoplasm increases in amount, loses clarity and acquires an increased basophilia. Pseudopodia and vacuoles are common. The azurophil granules increase in number and size and an unusual form about one micron in diameter is pathognomonic.

Any combination of these nuclear and cytoplasmic changes may occur but there is a differentiation into two broad haematological types—not related to Downey’s [1] analysis.

Type 1.—Considerable pleomorphism with a predominating monocytoid appearance.

Type 2.—A more uniform cell type—atypical large lymphocytes—lymphocytoid predominance.

In general, leucocytosis over 10,000 indicated mainly Type 1 cells while a count of 5,000 to 10,000 yielded a mixture of Types 1 and 2, and a leucopenia under 5,000 indicated Type 2. Thus to some extent pleomorphism is proportional to the output of atypical cells.

Other points noted in the blood picture of this series were:

1. Absolute neutropenia is occasionally seen.
2. Eosinophils and basophils may be slightly increased.
3. True monocytes are diminished in numbers.
4. Cases examined after clinical recovery in the fourth and fifth weeks sometimes showed the blood picture of the acute stage in even more pronounced form. Cases which were clear of the atypical cells showed a rise in normal large lymphocytes and a corresponding drop in the small lymphocytes, sometimes reversing the usual ratio of four or five small to one large.
5. In the acute stage this reversal of lymphocyte type may also occur and it precedes the diagnostic picture.

THE PAUL-BUNNELL TEST.

In view of the results obtained it is well to give a brief account of the technique used [2].

To 0.5 ml. quantities of the dilution of inactivated serum 1.5 ml. of 0.6 per cent suspension of sheep cells is added. The cells were three to five days old. The tubes are shaken and placed in a 37°C. water bath for one hour and then in the refrigerator overnight. In the morning the tubes are gently inverted three times and macroscopic agglutination is considered positive. The titre recorded is the final dilution after adding the sheep cells. The test must be strictly standardized.

Ox cell absorption was done but guinea-pig kidney was not available.
Twenty cases were tested between the third and the twenty-first days and a titre of 1 in 20 was never exceeded. Ten were tested in the fifth week and three gave titres of 1:80, 1:80, and 1:160. The remainder gave a titre of 1:20 or less. The cases were drawn from such a wide area that an extensive follow-up was not practicable.

**The Origin of the Atypical Cells.**

It is now generally agreed that these are lymphoid in origin. The simplest explanation is that both lymphocyte and monocyte have a common precursor whose ultimate differentiation is possibly determined by its geographical site in the lymphoid architecture, and that the stimuli responsible for the glandular fever syndrome distort both lines of syntheses and cause the production of a variety of cells which have both lymphocytic and monocytic characteristics.

**Summary.**

Eighty-four cases of glandular fever are briefly considered and their clinical and hematological group qualities noted. An important feature is the very frequent absence of generalized adenitis. If the blood of all patients with a sore throat had not been examined most of these cases would have been missed. The clinical manifestations are protean and the disease cannot with certainty be regarded as a single entity. No one hematological detail is unequivocal and while some films are obvious others require a careful assessment of individual cells. The occurrence of remarkably large granules in otherwise more or less normal lymphocytes is a valuable point in the recognition of the leucopenic lymphocytoid type.

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**References.**

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