Clinical and other Notes

(2) Method of entry of the invading organism. No cutaneous wound was present; entry was probably effected through the left tonsil.

(3) The close resemblance of this case to purpura hæmorrhagica, and the possibility of such cases being really due to an infection with a similar organism.

(4) The abnormality of the white cell count, i.e., leucopenia with relative lymphocytosis of sixty-one per cent, and polymorph decrease to twenty-one per cent.

We are indebted to Lieutenant-Colonel A. A. McNeight, i.M.S., commanding Indian Military Hospital, Quetta, for permission to publish the notes on this case.

A CASE OF MYELOCYTIC LEUKÆMIA.

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The interest in the case of myelocytic leukæmia, which is shortly described in the following notes, lies in the enormous size of the spleen at the time of death, and in the comparatively short duration of the last phase of the illness.

The patient was a rifleman, aged 25, and with a total service of seven years, of which five and a half years had been spent in India. He was stationed in Landikotal, and had been employed for seven months as a dining-hall orderly. It is likely, therefore, that he was not regarded as one of the more robust members of his company. On August 17, 1927, he reported to his medical officer, complaining of pain in the left shoulder.

His medical history sheet contained seven entries. In February, 1921, he was treated at Netley for fifty-one days for iridocyclitis of the right eye. It is noted that the discs and fundi were normal, and the media clear. At Benares, in June, 1923, he was in hospital for eight days with benign tertian malaria, and for six days with iritis. He had a second attack of benign tertian malaria in July, 1923. In May, 1924, he was admitted to the Military Hospital, Peshawar, for iritis of the left eye, and remained under treatment for twenty-four days. In August, 1924, iridocyclitis of the right eye caused his admission to hospital for twenty-nine days, and in April, 1925, he was in hospital for five days with phlebotomus fever.

He was admitted to the Combined Indian Military Hospital, Landikotal, on August 17, 1927, and gave a history of having been rather constipated for the previous week, and of pain in the left shoulder for two or three days. He had had an attack of "shivers" while straining at stool that morning.
Examination revealed nothing abnormal in the chest, and palpation of the abdomen gave no information, owing to the great rigidity of the recti, especially the left. Percussion revealed a large area of dullness continuous with the splenic area and filling up most of the left side of the abdomen. The blood-picture showed an enormous increase in the leucocytes, and the presence of large numbers of myelocytes. No malaria parasites were found. The temperature at night rose to 100.4°F, and a soap-and-water enema was given with a fair result.

On August 18 he was transferred to the British Military Hospital, Peshawar. He was then a rather spare, slim man, of moderately good colour, who appeared quite comfortable in bed. The tongue was moist, lightly furry, and the respiration thoracic. The pulse was of good quality, regular, and eighty to the minute. The heart sounds were closed, and rather ringing in quality. Except for a few bubbling rales at the left base, the lungs were clear. The abdomen was tumid, there was no complaint of pain, and no tenderness on palpation or percussion. The flanks were tympanitic. A huge, hard mass occupied the greater part of the abdomen. It was immobile, dull to percussion, shading off to a tympanitic note, and had a notch at the right margin. The dullness was continuous with the area of splenic dullness in the left hypochondrium, and was continuous over the precordium with heart dullness, reaching to the sixth rib in the left mid-axillary line. The upper limit of liver dullness was the fifth rib in the right mid-clavicular line, and the sixth rib in the right mid-axillary line. Digital examination disclosed ballooning of the rectum, and the absence of faecal matter. No enlarged lymphatic glands were found, and the urine was normal. The gums were healthy, and purpura and visible haemorrhages were absent, except for a small haemorrhage in each retina. The result of the blood examination is given in the table which follows later.

On August 19, radiotherapy was applied to the spleen, and he was given at first, liquor arsenicalis, and later, potassium bromide.

The spleen steadily enlarged, and the general abdominal discomfort increased, although there was no complaint of pain. On the 24th there were small areas over the enlarged spleen which were tender to palpation. A turpentine enema was required daily. During the last four days the pulse rose to over a hundred, but the temperature remained normal all the time. He died quietly in his sleep at 5.30 on the afternoon of September 2, the seventeenth day after his admission to hospital. The lymphatic glands remained unenlarged, and there were no visible gross haemorrhages. The urine on the day of death showed no abnormality.

The following table gives the results of eleven blood examinations which were carried out.

Early on the morning of September 3 a partial post-mortem examination was carried out.

The body was that of a small man, about five feet six inches in height, rather wasted, and with an enormously distended and very tense abdomen.
Rigor mortis was not well marked, and there was very little post-mortem staining.

The heart was large, pale and flabby, and weighed twelve ounces.

<table>
<thead>
<tr>
<th>Date</th>
<th>Polymorphonuclear leucocytes</th>
<th>Myelocytes</th>
<th>Myeloblasts</th>
<th>Lymphocytes</th>
<th>Large mononuclears</th>
<th>Total leucocytes</th>
<th>Total erythrocytes</th>
<th>Haemoglobin percentage</th>
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<td>66·8</td>
<td>81·0</td>
<td>—</td>
<td>1·4</td>
<td>1·8</td>
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<td>1·6</td>
<td>3·9</td>
<td>0·3</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>22.8.27</td>
<td>51·8</td>
<td>43·4</td>
<td>3·8</td>
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<td>0·2</td>
<td>156,000</td>
<td>3,670,000</td>
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<tr>
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<td>44·49</td>
<td>3·66</td>
<td>0·66</td>
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<td>—</td>
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<td>46·5</td>
<td>3·66</td>
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<td>51·2</td>
<td>4·2</td>
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<tr>
<td>27.8.27</td>
<td>44·66</td>
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<td>1·38</td>
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<td>6·17</td>
<td>0·5</td>
<td>0·5</td>
<td>—</td>
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Note. — On August 21, the percentage of polymorphonuclear leucocytes included 1 per cent eosinophils and 1 per cent basophils; the percentage of myelocytes included 1 per cent eosinophils and 1·6 per cent basophils. During the counting of 300 white cells, three normoblasts and four megaloblasts were seen. Diffuse polychromatophilia was present.

There was no fluid in either pleural cavity. The left lung had a few recent adhesions at the base, and showed some hypostatic congestion in the lower lobe. Otherwise it appeared healthy. All over the apical lobe of the right lung were old and dense adhesions, and the lobe was greatly congested, and full of blood-stained muco-purulent fluid. There was no sign of old tuberculous lesions in the lung substance. The left lung weighed twenty-four ounces, and the right lung thirty-two ounces.

There was a small amount of clear fluid in the abdominal cavity. No haemorrhages were found, and no enlarged lymphatic glands.

The spleen occupied most of the abdominal cavity, and was found on removal to weigh exactly sixteen pounds, rather over thirty-six times its normal weight. Over the whole of the anterior surface were small, fine, recent adhesions easily broken down. Part of the anterior surface was overlapped by the left lobe of the liver, and at this place there were fairly firm adhesions requiring considerable force to break them down. The upper pole of the spleen was bound down to the under surface of the diaphragm by old and dense adhesions. The posterior surface was free from adhesions, and at the hilus the pedicle appeared to be almost non-existent. The spleen was rather soft and friable, and was of a dark plum colour, with white patches over the anterior surface.

The liver was large, pale, flabby, and friable. It showed no sign of haemorrhage and was of the same consistency all through. It weighed seven pounds twelve ounces.

The kidneys were large, but appeared normal, the capsule stripping readily. The left kidney weighed seven ounces.

The stomach and intestines appeared normal though somewhat
compressed. The large intestine was slightly increased in lumen and contained scyballa. No haemorrhages were found.

The bone-marrow of the right tibia was of a bright pink colour all through.

The body decomposed in an unusually rapid and offensive manner.

Microscopic examinations were subsequently carried out with the following findings:

Spleen: The whole of the pulp was stuffed with white cells of the granular series. There were numerous infarctions. The capsule and the stroma did not appear to be much thickened.

Liver: The lobular arrangement of a normal liver could not be distinguished. The liver cells appeared scattered in small groups of three or four among a vast collection of white cells. No evidence of necrosis was seen.

Bone-marrow: The cells of the bone-marrow from the shaft of the tibia were almost entirely myelocytes—neutrophil and eosinophil. There were a few myeloblasts, a few megalokaryocytes, and a few erythroblasts.

Lung: All the capillaries were filled with white cells. Microscopic areas of emphysema alternated with small, consolidated areas. Scattered through the lung was a considerable amount of pigment, some black, some golden yellow.

Heart: The muscle fibres appeared fairly normal, but were separated from one another by capillaries full of white cells.

Kidney: The tubules showed cloudy swelling of the epithelium with patchy desquamation. The glomeruli were very prominent owing to their capillaries being packed with white cells.

The declared course of this soldier's illness lasted only seventeen days, the predominant cell in the blood was the neutrophil myelocyte, the spleen at the time of death weighed sixteen pounds, and haemorrhages were notably absent.

The above notes are published with the permission of the officers commanding the hospitals concerned.

FRACTURE OF TRANSVERSE PROCESS OF FOURTH LUMBAR VERTEBRA.

By MAJOR J. H. M. FROBISHER, O.B.E.

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The following case and X-ray print of a naval rating admitted to the Military Hospital is forwarded, as it appears of some interest:

Peter M., leading seaman, H.M.S. "R.," was admitted to hospital on July 25, 1927, suffering from "contusion right kidney." There was a history of patient being struck over the right loin by a block which carried away whilst he was assisting to spread the foc'sle awning on July 25, 1927. When seen after the accident there was only slight shock. Over the right