HYPO- AND HYPER-GLYCAEMIA

Insulin reactions are occasionally reported by patients, but, with rare exceptions, they have not been serious, and patients are instructed to reduce the dose at once. Four patients have, however, had hypoglycaemic coma, and in one of these the onset was so rapid that she fell, and a fracture of the olecranon resulted. In one of these cases death resulted, in spite of the fact that on admission to hospital the blood sugar was restored to normal by glucose intravenously. A large dose of insulin had been given before admission, because the case was mistaken for one of hyperglycaemic coma. The patient was a woman of 20 years—a severe diabetic—and a necropsy showed an enlarged thymus, with thymus tissue on section.

Three patients with hyperglycaemia have been re-admitted to the ward in coma, in one case brought on by influenza, in another by an alveolar abscess. Both these recovered, but the third died. Other cases of coma may, however, have been treated at some other hospitals and have continued attending there.

BLOOD PRESSURE

Joslin¹¹ found the blood pressure to be lower than normal in patients under 35, but above normal after that, and Koopman's¹² view is somewhat similar. Adams¹³ found that, although more cases have a systolic blood pressure above 150 than is the case in normal subjects, more cases have a systolic blood pressure under 110 than is seen in normal subjects. In Major's¹⁴ cases the peak of a graph fell between 135 and 150, while in normals it fell between 120 and 135. Katz Klein,¹⁵ Kramer,¹⁶ Bell and Clawson,¹⁷ all found an increased blood pressure to be common. Elliott¹⁸ considered that it was normal, and Nathanson¹⁹ stated that the incidence of hypertensive hypertrophy of the heart at post-mortem indicates that hypertension is only slightly more common in diabetics than in non-diabetics.

I took the blood pressure in 60 patients who have attended over an average period of three years, and still continue, and repeated examination of those with high readings at subsequent visits. There were 32 cases with a systolic pressure above 150 mm. of mercury, or a diastolic above 100 mm., the average being 164 systolic and 96 diastolic. There were 28 cases with a systolic below 150 and a diastolic under 100, the average being 136 systolic and 83 diastolic. A trace of albumin was present in the urine, in 4 cases with a blood pressure over 150 and in 2 with a blood pressure below 150. In 13 cases a moderate amount of sugar was found on the first day the blood pressure was taken, in 10 a small quantity, and in 37 sugar was absent. In 9 of the cases with frank sugar a faint trace of acetone was present. There was no relationship between the glycosuria and the blood pressure, but, of course, it is quite likely that at another visit some of those with glycosuria would be sugar-free. The urine tested was the specimen passed early on that morning, and the chemical findings represent a fair average of the insulin patients as a whole.

These 60 cases on which I took the blood pressure were also examined for evidence of pulmonary tuberculosis. They were x-rayed by Dr. H. M. Morris, and in 59 cases the lungs showed no sign of tuberculosis; in one, however, there was active disease at the right apex. This patient had been attending and having insulin for two and a half years; he was receiving 50 units daily, and, so far as his blood sugar and urinary tests showed, he kept to his diet. Joslin²⁰ saw 43 cases of tuberculosis of the lungs in 3,000 cases of diabetes, while Fitz²¹ had 35 in 1,529 cases. Tuberculosis before treatment is therefore not uncommon, but I was disappointed to find it developing in a man after two and a half years' treatment, though this may be a coincidence.

CONCLUSIONS

1. The insulin requirements for 61 cases, observed for two to six years on a liberal carbohydrate diet, show that the dose had to be reduced in 17 and increased in 20, while in 24 no change was necessary.
2. It was possible to stop insulin in 19 out of 171 cases, but it had to be restarted in 8.
3. In only one case seen in the clinic was it possible to stop insulin and return to an unrestricted diet. This patient was developing cirrhosis of the liver.
4. The blood pressure in treated cases shows an increase above a systolic pressure of 150 mm., or a diastolic of 100 mm. Hg in 32 out of 60 which have been on insulin for an average period of three years.
5. Insulin reactions occurred occasionally, but rarely gave rise to serious results.

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BONE ABSCESES DUE TO BRUCELLA MELITENSIS

BY

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The occurrence of arthropathies and hydrarthroses complicating Mediterranean fever has been extensively noted in the medical press. Bone lesions proper have been reported, but very little stressed. In the Iowa series of 375 cases Hardy¹ quotes 32 per cent. arthropathies, one case of hydrarthrosis, and one case which was operated on for osteomyelitis, and in which pus was found. In the Ohio series of 175 cases, Simpson² finds 31 per cent. arthropathies. Baker³ has reported a very interesting case of intermittent hydrarthrosis, in which the hydrarthrosis recurred at regular intervals over a period of five months, seventeen years after the initial *Br. melitensis* infection. More recently Professor S. Weil⁴ has reported a case of hydrarthrosis of the foot due to Malta fever, pointing out that this may occur either during the febrile period or long after its resolution. By way of comparison it is interesting to find Zdrodowski⁵ quoting 17.5 per cent. bone or joint lesions occurring in guinea-pigs experimentally inoculated with *Br. abortus*. A case has also been reported from Barcelona⁶ in which a spontaneous fracture occurred as a sequel to a *Br. melitensis* infection. Most of these authors appear to agree that it is rare for these bone and joint lesions to leave permanent disability.

As little has been published on this subject in British medical literature, it is thought that this case may be of interest, since here osteitis and hydrarthrosis coexist in the same patient.

HISTORY OF CASE

The patient, aged 25, had served for three years in India, and then for fourteen months in the Somaliland Camel Corps. On November 1st, 1931, during his return home on leave, he experienced pains in his foot. He developed periosteal abscesses of his left tibia and of a rib, and his right knee became swollen and painful.

He was examined here on December 1st, when a stereoscopic x-ray photograph suggested a small focus in front of the tibial spine. The knee was immobilized in plaster; the abscess round the eighth left costo-sternal junction was aspirated and pus withdrawn. This was found to contain no tubercle bacilli, but in cultures on plain agar and blood-agar some colonies of a small Gram-negative bacillus appeared. Some days later this was identified by cultural and serological tests as *Br. melitensis*. On December 9th the knee-joint was aspirated, and two ounces of opalescent, straw-coloured, coagulating fluid were withdrawn. This contained cells, of which 88 per cent. were polymorphs; it was culturally sterile.

On December 15th an agglutination test of the patient's blood serum was positive for *Br. melitensis* at a dilution of 1 in 125, and for *Br. abortus* at 1 in 50. A rough absorption test of specific *melitensis* and *abortus* serums with a suspension of the organism showed more complete absorption of the former than the latter. These findings, coupled with the fact that the primary culture grew well without any CO₂, left little room for doubt about the identity of the organism; but in view of the rarity of the case Professor G. S. Wilson, who has made a special study of this group of bacteria, was asked, and kindly consented, to examine the culture. His report includes the following data.

1. Sensitiveness to Dyes

Culture Medium Containing	Growth in 3 Days at 32° C.
No dyes (control)	++
Thionin, 1 in 60,000	+
Thionin, 1 in 30,000	±
Fuchsin, 1 in 50,000	++
Fuchsin, 1 in 25,000	++
Methyl-violet, 1 in 100,000	++
Methyl-violet, 1 in 50,000	+
Pyronin, 1 in 200,000	±
Pyronin, 1 in 100,000	-

2. Agglutination by Special Monospecific Serums

Strain	<i>Abortus</i> Serum	<i>Melitensis</i> Serum
<i>Br. abortus</i>	1 in 640	0
<i>Br. melitensis</i>	0	1 in 80
Patient's strain	0	1 in 80

3. Production of H₂S—No production in four days.

A second specimen of pus from the same source gave a rather more profuse growth of the same organism.

The affected knee showed great improvement on complete immobilization, and the patient's general condition remained good. The signs of inflammation in the joint quieted down, the knee was cool, there was very little fluid, and the patella was freely movable. But on February 2nd the patient developed a fluctuant swelling on the back of his left forearm, which appeared to be a further pyaemic lesion. On February 24th there was very slight fluid in the knee-joint, the rib wound had completely healed up, and the swelling on the forearm had disappeared.

We conclude that both bone and joint lesions were complications of a *Br. melitensis* infection.

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ABDOMINAL NEPHRECTOMY FOR
RUPTURED KIDNEY

WITH NOTES OF THREE CASES

BY

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The abdominal approach to an injured kidney, only briefly touched on by the textbooks on emergency surgery, is so useful as to be worthy of comment, for "run-over" accidents are, if anything, steadily on the increase.

CASE REPORTS

Case 1.—Two years ago I operated on a man of 20, who had been run over. He had several fractured lower left ribs and a ruptured spleen. Opening the abdomen through a mid-line incision, I found much free blood and a grossly torn spleen, which I removed, good access being obtained by extending the wound transversely to the left. After mopping the blood and clots from the left para-colic gutter, I noticed the peritoneum was bulged forwards and discoloured, suggesting a retroperitoneal haematoma. Opening the peritoneum outside the descending colon, I found a completely torn kidney, which I removed without difficulty, after ascertaining that the opposite kidney was intact. Unfortunately, as occasionally happens with gross rib injuries, the man died fourteen days after operation from an extensive pneumonia, with pleural and pericardial effusion.

Case 2.—This occurred last year, when a young man injured his right lower ribs and sustained a compound comminuted fracture of his right ulna as the result of a motor cycle accident. After admission to hospital his pulse steadily rose (see chart). His abdomen was rigid all over, and the pain was especially localized at the right upper quadrant. The patient had haematuria. The provisional diagnosis was ruptured kidney, with a possible additional injury to the liver,

CASE 2

suggested by the rapid onset of the shock and collapse, and acute upper abdominal pain and rigidity. Operating through a split upper right rectus incision I found the abdominal contents normal, but a large right retroperitoneal haematoma was discovered. I opened the peritoneum outside the ascending colon and removed the right kidney, which was completely torn into halves, one, quite detached, lying in the haematoma. The operation was not difficult, being complete in less than twenty minutes, and the patient made an uninterrupted recovery.

Case 3.—At 11 a.m. on March 5th, 1932, a girl of 17½ ruptured her left kidney as a result of a fall down twenty-two stairs. She landed on her feet, giving her back a severe twist, and she immediately felt a sharp pain in her left side. Her doctor gave her morphine. At 2 p.m. she vomited. She was admitted to hospital with abdominal pain and gross haematuria at 3.45 (five hours after the accident). After admission her pulse rate rose slowly. She was given a further 1/6 of a grain of morphine. I saw her several hours later, when she was slightly pale and very restless, moaning with pain. The whole abdomen was rigid and hyperaesthetic, no difference between the flanks being elicited. Examination