cases the red cell fragility was increased but the serum bilirubin was within normal limits.

In our cases a quantitative method of estimating the fragility (for example, Simmel, 1923) was not employed, but it is unlikely that there was any notable increase. Fragility to saline is, however, rather an artificial measure of the red cells' destructibility in the body. It is conceivable that the presence of metastases in the marrow may so upset the metabolism of the haemopoietic tissue as to render the cells abnormally susceptible to phagocytosis by the reticulo-endothelial system. This change might not necessarily be reflected in any increased fragility with *in vitro* tests. Erythrophagocytosis was in fact a conspicuous feature in our first case, but was not observed in the second.

In those cases in which the primary growth was in the stomach the importance of the loss of intrinsic factor is of interest. It is noteworthy, therefore, that these cases have not been examples of megalocytic anaemia, and of the two here described the first was normocytic and the second microcytic and hypochromic.

"Haemolytic Anaemia" in Other Infiltrative Conditions of Bone.—It appeared of interest to consider the frequency of the occurrence of a similar syndrome in infiltrative conditions of bone other than carcinoma. A number of cases of Hodgkin's disease presenting features resembling those of the cases noted above are on record. Singer (1936) reviews eleven cases with one of his own. These eleven cases were reported by Holler and Paschkis (1927), two cases; Davidson (1932), three cases; Heilmeyer (1932), one case; Gripwall (1932) and Bergqvist and Gripwall (1935), one case; Dalous and Fabre (1933), one case; Bensis and Gouttas (1934), one case; Parkes Weber and Schwarz (1934), one case; and Horak (1934), one case. Von Braitenburg (1938) recorded a case which was remarkable in that, although lymphadenomatous deposits were confined to the mesenteric and mediastinal glands, a severe haemolytic type of anaemia developed. Only in four of the thirteen cases quoted were osseous deposits of lymphadenoma found, but the examination of the skeleton was not always complete. The red cell fragility was not estimated in every case, but in four it was found to be slightly increased. We have been unable to find any record of "haemolytic anaemia" occurring in myelomatosis, Hand-Schuller-Christian's disease, Gaucher's disease, or Niemann-Pick's disease. In leukaemia, however, cases complicated by the type of jaundice in question are occasionally seen. This again is a condition in which there is widespread infiltration of the marrow.

Extramedullary Megakaryocytosis.—In Case I haemopoietic tissue was observed in the liver and spleen; this is, of course, not uncommon with widespread marrow destruction. The occurrence of extramedullary megakaryocytosis in carcinomatosis is, however, infrequent. Vaughan and Harrison (1939) give an exhaustive bibliography on megakaryocytic myelosis and related conditions.

Summary

Two cases of leuco-erythroblastic anaemia complicated by jaundice are described. The jaundice was of the "haemolytic" or "retention" type, and the clinical picture corresponded in many respects with Lederer's syndrome. The first case had extensive carcinomatous deposits in the skeleton, and it seems likely that bone metastases were present in the second case. The primary growth had its origin in the stomach in both cases. In both the fragility of the red cells was normal.

Records of similar cases, in some of which the fragility was increased, are reviewed, and the occurrence of a similar syndrome in other forms of generalized bone disease is discussed.

Cases of skeletal carcinomatosis in which leuco-erythroblastic anaemia is complicated by "retention" jaundice are likely to be diagnosed as "Lederer's anaemia." Radiographs of the skeleton should be taken in cases presenting the features of haemolytic anaemia of doubtful origin, and a careful search should be made for any focus of malignant disease.

There is not enough evidence definitely to attribute the anaemia and jaundice in these cases to a haemolytic process, but it is possible that such a process is responsible.

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REFERENCES

- Bensis, V., and Gouttas, A. (1934). *Sang.* 8, 288.
Bergqvist, B., and Gripwall, E. (1935). *Acta path. microbiol. scand.*, 12, 79.
Braitenburg, H. von (1938). *Frankfurt. Z. Path.*, 51, 515.
Caroli, J., and Laverigne, H. (1937). *Bull. Mém. Soc. méd. Hôp. Paris*, 53, 1056.
Dalous and Fabre, J. (1933). *Paris méd.*, 2, 39.
Davidson, L. S. P. (1932). *Quart. J. Med.*, 25, 542.
Fairley, N. H. (1937). *Festschrift Bernhard Nocht*, Hamburg.
Gripwall, E. (1932). *Acta med. scand.*, 79, 489.
Heilmeyer, L. (1932). *Dtsch. Arch. klin. Med.*, 172, 628.
Holler, G., and Paschkis, K. (1927). *Wien. Arch. inn. Med.*, 14, 149.
Horak, J. (1934). *Casop lék. česk.*, 73, 628; abstr. in *Sang.*, 1935, 9, 642.
Kiser, E. F., and Rosenak, B. D. (1936). *J. Amer. med. Ass.*, 107, 963.
Lederer, M. (1925). *Amer. J. med. Sci.*, 170, 500.
— (1930). *Ibid.*, 179, 228.
Lucy, H. C. (1939). *Lancet*, 2, 76.
Rich, A. R. (1930). *Johns Hopk. Hosp. Bull.*, 47, 338.
Seemann, G., and Krasnopolski, A. (1926). *Virchows Arch.*, 262, 697.
Simmel, H. (1923). *Dtsch. Arch. klin. Med.*, 142, 252.
Singer, K. (1936). *Med. Klinik*, 32, 179.
Vaughan, J. M. (1936). *The Anaemias*, Oxf. Univ. Press, London.
— and Harrison, C. V. (1939). *J. Path. Bact.*, 48, 339.
Waugh, T. R. (1936). *Amer. J. med. Sci.*, 191, 160.
Weber, F. Parkes, and Schwarz, E. (1934). *Lancet*, 1, 680.
Whipple, G. H. (1922a). *Arch. intern. Med.*, 29, 711.
— (1922b). *Physiol. Rev.*, 2, 440.
Witts, L. J. (1932). *Lancet*, 1, 495, 549, 601, 653.

PENETRATING BAYONET WOUND OF THE PERINEUM

A CASE WITH INTERESTING COMPLICATIONS

BY

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The following case may be considered of interest owing to its stormy history due to complications.

History of Case

The patient, a corporal in the R.A.F., aged 23, was admitted at 4.30 a.m. on July 5, 1940, having jumped off a barrage-balloon winch in the darkness and landed on the point of a bayonet, which was fixed to a rifle standing beside the winch. He experienced immediate severe abdominal pain, vomited once, and complained of a desire to pass urine but inability to do so.

On examination he was very shocked. The pulse was 120 and thready; there was generalized abdominal rigidity; and a wound an inch long was present on the medial aspect of the left thigh, passing up over the adductor longus. No blood could be milked from the external urinary meatus, and rectal examination revealed nothing abnormal. A pint of whole blood was given intravenously, and an hour later his abdomen was opened under gas-and-oxygen anaesthesia by an infra-umbilical mid-line incision.

There was a considerable amount of free blood in the peritoneal cavity and a rent about an inch in length was found in the fundus of the bladder. This rent was closed with catgut sutures and the suture line then oversewn. The peritoneum on the anterior surface of the rectum was gashed, but the muscular coat was intact. The point of the bayonet had entered the mesentery of a loop of ileum about three feet from the caecum and had ripped up the mesentery as far as the gut, the mesenteric aspect of which had been perforated. Bleeding-points in the torn mesentery were secured and the gap was sutured. The perforation in the ileum was closed and the affected segment of intestine wrapped in a

warm saline pad. When re-examined a few minutes later its colour had improved, but since it was not quite normal the doubtful area was invaginated with interrupted Lembert sutures. The patient's condition at this stage did not permit of exploration of the bladder, and so a catheter was passed per urethram and tied in. The wound in the thigh was enlarged, its skin edges were excised, and it was packed in its whole length with flavine gauze.

The following day, in spite of repeated hot bladder wash-outs with 1 in 1,000 silver nitrate, bleeding into the bladder was still occurring. He was therefore again taken to the theatre, and his bladder was opened through the lower end of the original incision. A gash was found in the neck of the bladder involving the internal meatus and bleeding freely. Two catgut sutures were tied round the gash, but since no boomerang needle was available it was impossible to control the bleeding from that part of the wound within the internal meatus. Accordingly the neck of the bladder was packed with ribbon gauze, the end of which was brought out alongside a large suprapubic catheter, around which the bladder was closed. This controlled the bleeding, and when the pack was removed twenty-four hours later bladder wash-outs were only slightly blood-stained.

Acute Gastric Dilatation: Protein Shock

Thirty-six hours after the last operation the patient's condition began to deteriorate rapidly. His pulse went up to 140, his colour was poor, and he vomited almost two pints of foul brown fluid. He was very drowsy, and a blood-urea estimation at this stage showed 98 mg. per 100 c.cm. He complained of slight epigastric pain, which was continuous in character. His abdomen was free from rigidity, peristaltic sounds were normal, and there was some distension in the epigastrium. During the next six hours he vomited frequently and copiously, his pulse continued to rise, and the epigastric distension became more obvious. A splash could be elicited from his epigastrium. A diagnosis of acute gastric dilatation was made, a Miller-Abbott tube was passed into his stomach through the nose, and he was placed in the semi-prone position with the foot of the bed raised. Continuous siphonage was instituted through the Miller-Abbott tube and the patient was given a continuous intravenous drip of 5% glucose saline.

During the next seven days his condition slowly improved, siphonage of the stomach and the intravenous drip being continued all the time. Between four and five pints of brown fluid was aspirated from his stomach daily, and a careful balance was maintained between fluid lost in this way and in the urine and the amount given in the intravenous drip. At the end of this time, when he had sufficiently improved for the removal of the gastric tube to be considered, he suddenly had a rigor and his pulse shot up to 140. The intravenous saline was discontinued and he was given morphine. The next day his pulse had come down to 100, but his sclera and urine were definitely stained with bile pigments. A van den Bergh test gave an indirect delayed positive reaction and the plasma bilirubin was 4 mg. (8 units) per 100 c.cm. It was later ascertained that he had been inadvertently given a bottle of saline that had been opened some three days previously, and this complication, from which he soon recovered, was considered to be due to protein shock from impure saline. The Miller-Abbott tube was now removed, but the patient was kept in the semi-prone position for a further three days. No further vomiting occurred. Rectal salines were given twice daily.

Since during the time the Miller-Abbott tube had been in place he had been losing some four to five pints of gastric contents daily it was thought it would be profitable to ascertain the protein content of the fluid lost, so that we might anticipate symptoms of plasma-protein depletion such as famine oedema. This was accordingly done, and was found to be only 0.2%, a quantity which was considered insufficient to give rise to trouble in this direction.

Volvulus of Small Intestine

On September 9, when the patient was progressing very well, the last and most serious complication ensued. At

10 p.m. the patient was suddenly seized with severe continuous abdominal pain; he vomited once and became very collapsed. A rapidly progressing central abdominal distension supervened, most marked below the umbilicus, and the patient continued to vomit. An enema yielded a poor faecal result and a second enema was returned clear.

In view of the continuous nature of the pain, which was taken to indicate stretching of the mesentery, and the very rapid distension, a diagnosis of volvulus was made, and the abdomen was opened by a left pararectal incision under local anaesthesia supplemented by gas-and-oxygen. There was a little free fluid in the peritoneal cavity, and enormously distended coils of small intestine prolapsed through the wound. The peritoneal covering was dull and shaggy with fibrin, and there were numerous subserous ecchymoses. The distension extended up to the duodeno-jejunal flexure and down to within a few feet of the ileo-caecal junction.

A strong band consisting chiefly of omentum was found to be attached to the posterior abdominal wall on the left side. When this was divided there was found to be a volvulus of the greater part of the small intestine, which had passed between this band and the posterior abdominal wall. The volvulus spontaneously resolved itself when the band was divided and the released gut began straightway to show peristalsis. A No. 12 Jacques catheter was sewn into a distended coil of jejunum by Witzel's method and a large quantity of intestinal contents withdrawn. The wound was then closed and the catheter brought out on to the surface. A stomach tube was passed, and this was retained for two days, after which time the patient's condition had greatly improved. The enterostomy catheter was withdrawn six days later and the fistula healed within three days.

Apart from a severe alkaline cystitis and urethritis, which yielded to irrigations with 1% acetic acid in 1 in 10,000 flavine, the patient had no further mishaps and his cystotomy closed about six weeks after admission. On discharge his blood urea was 31 mg. per 100 c.cm. and his haemoglobin 105%.

I would like to stress the value of the Miller-Abbott tube in the treatment of acute gastric dilatation and in paralytic ileus. Its length makes really continuous siphonage a possibility, and its double channel greatly facilitates irrigation.

Summary

A case of bayonet wound of the thigh passing through the perineum and bladder and involving the mesentery and small intestine is described.

The supervention of the complications of acute gastric dilatation, protein shock from impure saline, and volvulus of the small intestine is likewise described.

The value of the Miller-Abbott tube is stressed.

V. Mittler (*Thèse de Paris*, 1940, No. 234), who records three illustrative cases, states that contrary to what might be supposed the clientele of quacks is not entirely composed of psychopathic individuals, but consists in large measure of normal or apparently normal persons. Three groups of quacks may be described. The first consists of mere swindlers who belong to the psychiatric group of Lombroso's criminal mass, in whom delinquency is a proof of mental deficiency. The second group consists of apparently normal persons in whom a curative power appears to exist and gradually develops into psychopathy, while the third group is composed of psychopathic persons who have a belief in an altruistic mission with the possible intervention of divine inspiration. The first group comes within the domain of criminal law, the third is the concern of a mental hospital, while the patients in the second group should be interned for a sufficiently long period for a prolonged examination to be made. Mittler maintains that education of the public will never result in a reduction in the number of quacks, as the taste for the marvellous is too deeply implanted in their mentality for a Press campaign, however well organized, to annihilate it.