Medical Memorandum

Serious Haemorrhage After Partial Gastrectomy in Unsuspected Chronic Myeloid Leukaemia

Conditions which predispose to dangerous bleeding following surgery are usually recognized by ordinary clinical examination before operation. Precautionary measures can then be taken. In the following case the patient developed severe haemorrhage associated with unsuspected chronic myeloid leukaemia which produced no recognizable symptoms or signs before operation.

CASE HISTORY

In November, 1955, a 59-year-old man was referred to hospital with vague abdominal symptoms of many years' duration, and anorexia and loss of weight for one year. Repeated investigation elsewhere had yielded negative results. His main complaint was severe pain in both loins and across the middle of the abdomen, made worse by standing, relieved by rest, and not related to meals. There had been no other significant symptom.

Examination revealed considerable wasting but no other abnormality. The haemoglobin was 11.8 g./100 ml. and the stools contained occult blood. A blood film was not examined.

Within a few days he was admitted in emergency with severe epigastric pain and almost board-like upper abdominal rigidity. Immediate laparotomy revealed an active gastric ulcer crater on the upper part of the lesser curve. The spleen was uniformly enlarged to twice the normal size and the liver showed slight uniform enlargement. Partial gastrectomy was performed with Billroth I reconstruction on November 9. Histological examination confirmed the features of a simple chronic peptic ulcer. During the resection and anastomosis, which took little over an hour, there was no abnormal bleeding. Then suddenly, at the time of inspection before closure, profuse oozing started from all the cut surfaces. The wound was closed tightly and the peritoneal cavity drained by a rubber tube. One bottle of blood was transfused during the operation and two bottles afterwards.

Severe blood loss continued from the wound, but gastric aspirations were free of blood and there was no melaena. Twenty-four hours after gastrectomy the abdomen was re-opened under general anaesthesia. The peritoneal cavity contained two to three pints (1.1 to 1.7 litres) of fresh blood, and there was profuse oozing from every raw surface. The wound was again sutured tightly, and a further four bottles of blood were transfused on November 10.

Investigation on the day of the second operation showed that the bleeding-time, whole-blood clotting-time, one-stage prothrombin time, plasma fibrinogen, and total serum proteins were normal. These results tended to allay anxiety.

On the third and fourth days after gastrectomy there was further substantial oozing of blood from the wound, and another bottle of blood was transfused. Haematological advice was then sought.

Tests on November 15 showed: Hb, 13.8 g./100 ml.; R.B.C., 4,500,000/c.mm.; W.B.C., 80,000/c.mm. (promyelocytes 14%, neutrophil myelocytes 14%, neutrophil band cells 12%, neutrophil polymorphs 54%, lymphocytes 2%, monocytes 4%); platelets (Lempert) 720,000/c.mm.; red cells, moderate anisocytosis, slight poikilocytosis, mainly normocytic and normochromic. Polychromasia +. Examination of bone-marrow smears from the sternum confirmed the diagnosis of chronic myeloid leukaemia. The bleeding-time, whole-blood clotting-time, and one-stage prothrombin time were again found to be normal, and the capillary fragility and thromboplastin generation test (Biggs and Douglas, 1953) showed no significant abnormality. Fibrinolysis was not detected (Biggs and Macfarlane, 1953).

There was only occasional oozing from the abdominal wound after November 15 for a few days, and it was henceforth never necessary to give a further blood transfusion.

Specific antileukaemic therapy consisted of busulphan ("myleran"), 4 mg. daily by mouth beginning on November 16. Splenic irradiation was impracticable as the patient was too ill to travel to the radiotherapy centre.

On November 22 the abdomen burst and the wound was resutured. No abnormal haemorrhage was encountered and the wound healed satisfactorily. Vitamin B supplement was begun on November 26, as the patient had developed a sore mouth and a swollen, sore, magenta-coloured tongue, along with peripheral paraesthesiae.

He responded admirably to the busulphan therapy. On December 6, after a total of 84 mg. of busulphan had been given, the total leucocyte count had fallen to 8,000/c.mm. At this time the haemoglobin level was 11.2 g./100 ml.

By December 14 he was well enough to return home. Without further specific antileukaemic therapy the haemoglobin level had risen to 14.8 g./100 ml., the red-cell count to 5,000,000/c.mm., and the total leucocyte count was 10,000/c.mm. on January 13, 1956. He remained well for five months, at the end of which time recurrence of leukaemic symptoms necessitated a further course of busulphan, to which he responded once more.

DISCUSSION

It is rare to observe bleeding in the leukaemias in the absence of thrombocytopenia. Rarely, in acute leukaemia, the presence of fibrinolysis (Cooperberg and Neiman, 1955), a circulating anticoagulant (Freeman, 1952), and factor V and prothrombin deficiency (Stefanini and Dameshek, 1955a) have been described. None of these abnormalities was found in the present case.

Occasionally patients with chronic granulocytic leukaemia present a haemorrhagic tendency with a normal or increased platelet count. In such cases surgical procedures are often complicated by severe bleeding which may or may not be associated with qualitatively abnormal platelets (thrombocytoasthenia), poor clot retraction, deficient prothrombin utilization during clotting, a prolonged bleeding-time, and a low serum level of serotonin in various combinations (Bigelow, 1954; Stefanini and Dameshek, 1955b).

Borgeson and Wagner (1929) thought that, in these cases of chronic myeloid leukaemia, the primitive leukaemic cells may infiltrate the vascular walls and proliferate there, causing injury and increased permeability.

The second point of importance is the excellent response to oral busulphan in a patient who was too ill to attend for radiotherapy. This drug is probably the chemotherapeutic agent of choice at present, with the possible exception of demecolcine ("colcemid"), whose place in therapy of this leukaemia has yet to be determined (Blackburn, King, and Swan, 1956).

Finally, the perusal of a blood film pre-operatively would probably have suggested the haematological diagnosis. From the present and past experience we believe that a haemoglobin estimation and examination of a stained peripheral blood film should be done, if facilities are available, before a major surgical procedure.

We are indebted to Professor R. P. Jepson for permission to report this case and to Miss P. A. Hall and Mr. J. Monaghan for laboratory assistance. We are grateful to the Board of Governors of the United Sheffield Hospitals for a grant through the Haematology Research Fund and for support from the Yorkshire Council of the British Empire Cancer Campaign.

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