Lesson of the Week

Acute abdominal pain due to an acquired disorder of coagulation

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Laparotomy is often performed to aid diagnosis and management of acute abdominal pain. Retroperitoneal haemorrhage is a rare cause of this pain, and failure to make a correct diagnosis before surgery is undertaken may prove costly.

Retroperitoneal haemorrhage is a rare cause of acute abdominal pain and may occur in patients with unsuspected disorders of coagulation

Case report

A 73 year old man presented with a four day history of frequent normal bowel motions followed by a day of abdominal pain, nausea, and vomiting. He also had a week's history of numbness and pain in his right leg. He had made an uneventful recovery from a shrapnel injury during the second world war and for many years had had venous ulcers without abnormal bleeding.

On examination he was pale and hypotensive. The pulse rate was 110 beats/min, and all peripheral pulses were palpable. Bruising was noted over the back of the right thigh and from the axilla to the elbow of the right arm. An ill defined tender mass was felt in the right iliac fossa. He lay with his hip inflexion, and his discomfort was made worse by straight leg raising. Rectal examination showed no abnormalities. Routine haematological tests showed a haemoglobin concentration of 79 g/l, a white cell count of $11.9 \times 10^9/l$, and a platelet count of $308 \times 10^9/l$. A clotting screen showed an international normalised ratio of 1.1, kaolin cephalin clotting time of 61 s (normal range 38-49 s), and normal thrombin time. Leaking aortic aneurysm was diagnosed, and although the possibility of a bleeding diathesis was considered, an exploratory laparotomy was performed. This showed a large retroperitoneal clot on the right side and extensive mesenteric bruising.

Postoperatively he bled excessively from the site of the incision and from the abdominal drains and required a large blood transfusion. The London Hospital haemophilia centre was consulted at this stage. A mixture of equal volumes of the patient's and normal plasma resulted in only partial correction of the prolonged kaolin cephalin clotting time. Incubation of the mixture at 37°C resulted in further lengthening of the clotting time. This suggested the presence of an inhibitor of coagulation that depended on time, which was found on specific assay to be directed against factor VIII. Acquired haemophilia was diagnosed. The patient's plasma factor VIII concentration was less than 10 IU/l (less than 1%) and the inhibitor concentration was measured as 5 Bethesda units against human and 1 Bethesda unit against porcine factor VIII.

After transfer to this hospital treatment was started with human factor VIII concentrate, but haemostasis was not achieved and so porcine factor VIII was substituted. At the same time high doses of immunoglobulin were given intravenously to suppress the inhibitory activity. Satisfactory concentrations of factor VIII were reached by regular administration of porcine factor VIII. As soon as healing had started cyclophosphamide and vincristine were added for further immunosuppression. The factor VIII concentration gradually returned to normal and was maintained by continuous administration of azathioprine.

During his nine weeks in hospital the patient received 41 800 U human factor VIII, 52 000 U porcine factor VIII, and 300 g immunoglobulin. The factor VIII alone cost roughly £30 000.

Discussion

This case highlights the problems and difficulties of diagnosing the cause of abdominal pain, particularly if it is the first manifestation of a bleeding disorder. Recognised surgical causes of retroperitoneal haemorrhage are leaking aortic aneurysm, local trauma, and vertebral fracture.¹ Spontaneous bleeding should be suspected if there is a pre-existing haemostatic defect, including the effect of treatment with anticoagulant drugs.

Our patient showed enough signs to point to a haemostatic abnormality, but this diagnosis was not considered seriously until after the laparotomy, when it was too late to avoid a hazardous and expensive postoperative course. The lack of a history of a haemostatic defect may have given a false sense of security to medical staff, not all of whom are familiar with interpreting results of haemostatic screening tests. Moreover, a leaking aortic aneurysm could have given rise to disseminated intravascular coagulation, which would have resulted in a similar clinical haemostatic picture. Further information on the site and nature of the palpable mass could have been obtained by ultrasonography, a non-invasive technique ideally suited to investigating abdominal pain in haemophilia.²

Liaison between the clinician and the laboratory is of the utmost importance once the results of tests are available, and immediate advice from a haematologist allows appropriate investigations to be carried out. If these tests are performed disseminated intravascular coagulation can be distinguished from the presence of an inhibitor even during emergency hours.

Acquired haemophilia may occur in association with pregnancy, connective tissue disorders, drug treatment, diabetes mellitus, neoplasms, and old age.³ Replacement treatment with conventional doses of factor VIII is comparatively ineffective, but inhibitory activity may be abolished by immunosuppression with cytotoxic drugs such as cyclophosphamide or azathioprine⁴ or treatment with intravenous immunoglobulin.⁵ When replacement treatment is necessary the choice lies among human factor VIII at high dosage, porcine factor VIII, unactivated or activated factor IX, and plasma exchange.⁶ Treatments must be chosen carefully and monitored closely and patients should be managed in haemophilia centres.

References

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