A CASE OF DICOUMAROL POISONING

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The following case emphasizes the grave danger of the use of the anticoagulant dicoumarol without adequate laboratory control. It also stresses the importance of the use of fresh blood and not stored blood in the therapeutic control of haemorrhage from dicoumarol overdosage. Vitamin K and stored blood are without effect. There is a definite latent period before therapeutic measures can take effect, and various mechanical factors may have to be dealt with. The reaction to treatment, when it occurs, is dramatic, and no case can be considered hopeless. In this instance, despite the severe and generalized nature of the haemorrhages, complete recovery occurred.

Case Report

The patient, a man aged 57, was admitted to hospital on account of severe haematuria on Oct. 4, 1947. He had read in the daily papers that dicoumarol had been used for coronary thrombosis, but it was not known that the cause of the haematuria was dicoumarol until a detailed history was taken, and by this time various other severe haemorrhagic symptoms were present. It was revealed that on his own initiative he had taken 100 mg. daily for nine or ten days. There was a latent period of seven days before signs and symptoms appeared. This latent period has been previously pointed out by Crawford and Nassim (1944). The first symptom was abdominal pain, which preceded sudden gross haematuria by 24 hours.

Within 24 hours of being admitted to hospital the patient's general condition deteriorated rapidly. Multiple petechial haemorrhages occurred in the skin and subcutaneous tissues, then melaena and a massive sublingual haematoma developed which increased in size hourly. The initial B.P. was 160/115. The tongue became the size of a tangerine orange and immediately threatened to obstruct his airway. Despite the immediate transfusion of blood the swelling of the tongue increased and a tracheotomy was performed while transfusions were continued. A considerable submandibular haematoma developed and the patient was *in extremis*. His B.P. was 90/74 on Oct. 7. The anaemia was relieved but haemorrhages continued. A pint (570 ml.) of stored blood was given, with vitamin K injections intramuscularly; the response was not satisfactory, and haemoptyses occurred. X-ray examination with a portable apparatus revealed multiple shadows in the lung fields. Further transfusion of 1 pint of fresh blood was given on Oct. 8, but his condition remained precarious. A further 3 pints (1.7 litres) of blood was obtained from the relatives, and this was given by slow drip over the next 48 hours. His condition gradually improved and the haematuria and petechial haemorrhages decreased. Whole-blood transfusion had a dramatic effect on the prothrombin times. These were: Oct. 7, 47% normal; Oct. 8, 48% normal; Oct. 9, 50% normal; Oct. 17, 57% normal.

Examination of the blood on Oct. 5 showed: haemoglobin, 82%; red cells 3,600,000; white cells, 12,200; reticulocytes, 3%; platelets, 108,000. On Oct. 10 the haemoglobin was 50%. On the 14th the white cells numbered 8,000, reticulocytes 7%, platelets 240,000. On the 17th the haemoglobin was 97%; red cells, 4,800,000; white cells, 8,600; reticulocytes, 5%; platelets, 288,000.

Discussion

Dicoumarol must be considered in the differential diagnosis of all cases of haematuria in which the drug has been taken. This is discussed by Rosenbloom and Crane (1946). It would appear that haematuria is one of the earliest signs

of dicoumarol intoxication and an indication for correct therapy, as more severe symptoms may quickly supervene in a matter of hours. In our case venesection before transfusion was not performed, as was practised by Shlevin and Lederer (1944), although there was a definite danger of left-sided heart failure from a recent coronary thrombosis. Jaundice developed 130 days after the initial transfusion. This was taken to be of the homologous serum type rather than due to any direct toxic action of the dicoumarol on the liver. Jaundice as a manifestation of dicoumarol poisoning has not yet been reported. The present case, we think, illustrates the importance of including dicoumarol in the list of dangerous drugs.

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REFERENCES

- Crawford, T., and Nassim, J. R. (1944). *Lancet*, 2, 404.
Rosenbloom, D., and Crane, J. J. (1946). *J. Amer. med. Ass.*, 132, 924.
Shlevin, E. L., and Lederer, M. (1944). *Ann. intern. Med.*, 21, 332.

Medical Memoranda

Auricular Fibrillation after Trichlorethylene Anaesthesia

The following case is unusual enough to merit publication. It is of interest in that although the occurrence of vagal inhibition (Haworth and Duff, 1943), sinus bradycardia, and auricular and ventricular extrasystoles (Hewer, 1942, 1943; Barnes and Ives, 1944) has been noted during anaesthesia with trichlorethylene, there is only one record in the current literature (Lloyd-Williams and Hewspear, 1942) describing the onset of auricular fibrillation in association with this form of anaesthesia, although by now innumerable administrations have been given in this country alone.

CASE HISTORY

A healthy woman aged 50 was admitted to hospital for the repair of a large cystocele and rectocele. She had always been in excellent health, and at the pre-operative examination she appeared to be very fit, with no clinical evidence of cardiovascular disease. The blood pressure was 140/90. She was, however, unduly nervous and apprehensive.

Pre-operative medication consisted of 1/6 gr. (11 mg.) of morphine and 1/150 gr. (0.43 mg.) of hyoscine. Anaesthesia was induced with 0.5 g. of sodium thiopentone, and this was followed by nitrous oxide, oxygen, and trichlorethylene, using a "semi-closed" technique with the standard Boyle machine. Induction and maintenance were smooth and uneventful. Anoxia was not permitted at any time, and there were none of the usual signs to indicate overdosage of the drug—which was not surprising, as an absolute minimum was used. No irregularities of the pulse were noted during operation, which lasted 55 minutes. At the end of the operation the patient's general condition was good, but the pulse rate was rather slow (65).

Fifteen minutes later we were called to the ward; she was almost conscious, but sweating profusely and rather pale, with a pulse rate of 40. In the absence of other findings it was considered that this might be a vagal effect and 1/100 gr. (0.65 mg.) of atropine sulphate was given intravenously. Within two minutes the pulse rate had returned to 65–70 and remained so, although from time to time multiple extrasystoles could be detected by palpation and auscultation. Four hours later we were again called to see her and found that she was dyspnoeic and slightly cyanosed, but apart from the dyspnoea she felt quite comfortable. On examination auricular fibrillation was present with a ventricular rate of approximately 165. There were no other abnormal clinical signs. A course of intensive "digoxin" therapy was instituted. The following morning auricular fibrillation was still present, but the ventricular rate was down to 100 and the cyanosis and dyspnoea had disappeared. By evening the fibrillation had ceased and the cardiac rhythm was completely regular, the pulse rate being 75. Digoxin was discontinued and the cardiac rhythm remained normal. Further convalescence was uneventful. Unfortunately it was impossible to have an electrocardiogram taken during the period of fibrillation, but clinically the diagnosis was never in