Six weeks later, however, she was readmitted with a small hard swelling on the left cheek and oedema of both eyelids. She was again treated with oral phenylindanedione, 30 mg. daily for six days, followed by 20 mg. daily for six days, and chlortetracycline 250 mg. daily in divided doses, which was continued for three weeks. Progress to recovery was uneventful.

Radiological evidence of sequestrum formation could not be demonstrated at any time.

The patient was followed up for six months after her final discharge, during which time she remained well.

COMMENT

The combination of oedema of both eyelids, bilateral proptosis, diminution of the ocular movements, engorgement of the retinal veins, and bulging of the fontanelle made it reasonable to assume that cavernous sinus thrombosis had occurred. Treatment was therefore based on this assumption.

The effectiveness of combining antibiotic and anticoagulant treatment in the majority of adult cases of cavernous sinus thrombosis is well established (Lillie, 1951; Shaw, 1952). There appears to be no previous reference to this condition in early infancy.

The case described illustrates the importance of basing the antibiotic treatment on bacteriological sensitivity tests, especially in regard to staphylococcal infections which have been acquired in hospital, where penicillin-resistant strains are likely to be encountered.

I am indebted to Dr. A. P. Norman for permission to publish this case and for help and encouragement in the preparation of this paper.

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Agranulocytosis from Carbimazole

The initial reports on the use of carbimazole ("neomercazole"; 2-carbethoxythio-1-methylglyoxaline) in the treatment of thyrotoxicosis suggested that the drug might be free from toxicity in therapeutic dosage (Poate, 1953; Doniach, 1953). Further experience has confirmed the clinical efficacy of carbimazole but has revealed that toxic effects occur in a small percentage of treated patients. Painful or swollen joints, pyrexia, and skin eruptions have been described, but the most important complication is agranulocytosis, of which four examples have been published. As carbimazole is a relatively new drug, it is felt that the following account of a fifth case of agranulocytosis is worthy of record.

In the case of agranulocytosis reported by Fraser *et al.* (1954) the patient had previously had severe skin and joint lesions when given methimazole ("mercazone"; 2-mercapto-1-methylglyoxaline). Recovery ensued when the carbimazole was discontinued, as occurred in the two cases described by Bartels (1953) and Harrison (1954), but in that described by Richardson *et al.* (1954) carbimazole produced a complete and fatal marrow aplasia.

CASE REPORT

A married woman aged 70 was admitted to Bromley Hospital on July 21, 1954, for the investigation of lassitude, diarrhoea, and loss of weight. Examination revealed a nodular goitre of moderate size, a fine tremor of the fingers, and moist palms. The basal metabolic rate was +30% and

the sleeping pulse was persistently raised above 120 a minute. Further investigations disclosed no abnormality other than some diverticulosis of the sigmoid colon. The blood count showed a haemoglobin of 90% and a white-cell count of 3,000 per c.mm., with 1,770 neutrophils. The blood cholesterol was 170 mg. per 100 ml. The body weight was 64.5 kg.

In view of the patient's age and the moderate degree of her symptoms, it was decided to treat the thyrotoxicosis with an antithyroid drug. Carbimazole, 30 mg. daily in three divided doses, was started on July 31. After ten days of treatment there was undoubted improvement in her symptoms and signs. In particular the sleeping pulse, which had hitherto been uninfluenced by bed rest alone, fell to a normal level. She was discharged from hospital on August 16, when the dose of carbimazole was reduced to 15 mg. daily, and arrangements were made to follow her progress as an out-patient.

Fourteen days after discharge the patient sent for her practitioner, Dr. R. Colby, of West Wickham, who found her ill with a fever of 103° F. (39.4° C.). Carbimazole was discontinued, penicillin was given, and a blood count confirmed the suspected diagnosis of agranulocytosis; haemoglobin, 92%; white cells, 2,000 (neutrophils 140, lymphocytes 1,640, metamyelocytes 160, myelocytes 60). The patient was readmitted to hospital, where she ran a fever of 102° F. (38.9° C.) for the first two days. The tonsils and fauces were inflamed and the submandibular glands were enlarged. Penicillin therapy was continued, and within five days the sore throat and general condition of the patient had greatly improved and the temperature had subsided to normal. The white-cell count showed a progressive rise, and on the sixth day after admission was 5,000 (2,300 neutrophils, 1,600 metamyelocytes, lymphocytes 900, basophils 200 per c.mm.). Examination of the sternal marrow on the same day was reported to show the typical picture of the maturation arrest seen in drug reactions. The haemoglobin percentage and platelet count remained normal throughout her illness and the bleeding-time was not prolonged. She made a complete clinical recovery.

COMMENT

The published reports on the use of carbimazole, apart from that of Bartels (1953), suggest that in therapeutic dosage it is the least toxic antithyroid agent yet available (see Fraser *et al.*, 1954). A second advantage of the drug is that the degree of thyroid gland enlargement that accompanies its use is less than with the thiouracil derivatives. In a series reported by Kirkeby and Rømkke (1955) the thyroid gland increased in size in 34% of the cases treated with methylthiouracil or propylthiouracil, compared with 7% in those treated with carbimazole. A third advantage, claimed by Poate (1953), is that the thyroid gland is less vascular after carbimazole therapy than after the thiouracil drugs.

The results of further studies on the use of carbimazole are awaited before its place in the treatment of thyrotoxicosis can finally be assessed. Meanwhile the present case report is a further reminder that the use of this relatively safe and effective antithyroid drug is not devoid of risk.

The patient was admitted under the care of Dr. N. S. Plummer, to whom I am indebted for permission to publish. I thank Dr. J. Keall and Dr. K. J. Randall for the haematological findings.

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