of terminating the pregnancy. A rise of blood pressure in the last few weeks of pregnancy or during labour should be viewed seriously and caesarean section undertaken.

Summary and Conclusions

There are records of only 91 patients in whom coarctation of the aorta was associated with pregnancy. Five further cases are reported.

The association carries with it serious risks, especially of rupture of the aorta, but, in spite of these, many women have not been adversely affected by multiple pregnancies and have lived to an age well beyond the average expectation of life in coarctation of the aorta. Earlier diagnosis and surgical treatment of the coarctation offer means of improving the prognosis.

Diagnosis is not difficult, and depends mainly on the awareness of the examiner and routine palpation of the femoral pulses in all patients with hypertension. The antenatal clinic offers unusual opportunities for early diagnosis.

General principles in management of these patients are described and the importance of individual assessment and surgical treatment for the coarctation is stressed.

I thank Mr. J. M. McKiddie, who kindly allowed me to quote Cases 2 and 3; the late Mr. B. L. Jeaffreson, who operated on Case 1, and Dr. A. Green, who supplied the after-history; the late Professor P. L. Sutherland and Drs. D. E. Price and W. L. Rose for post-mortem reports; and Drs. G. Grimshaw and D. Gray for help with some of the translations.

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It is recorded in the annual report of the Chalfont Colony for 1953-4 that an arrangement has been made with the National Hospital for Nervous Diseases whereby patients, either before or immediately after entering the Colony, will go to the Queen Square or Maida Vale Hospitals for full investigation and report. The executive committee believes that a certain percentage of cases now going to the Colony will be intercepted, treated at Queen Square or Maida Vale, and returned to normal life in a few weeks. The medical staff of the Colony will also receive guidance from the staff of the National Hospital about the treatment of those patients who are finally admitted to the Colony.

HAEMORRHAGIC GANGRENE OF THE SKIN IN CHRONIC LYMPHATIC LEUKAEMIA

BY

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AND

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In chronic lymphatic leukaemia both specific and non-specific skin lesions may occur, but distinction between the two often rests on the histological picture.

In a study of the dermatological manifestations of the lymphoblastoma-leukaemia group, Epstein and MacEachern (1937) found that out of 60 patients with chronic lymphatic leukaemia 27 (45%) had non-specific skin lesions. Of these, the haemorrhagic type was commonest (15 patients), and usually occurred in the terminal stages. Although Sutton and Sutton (1941) mention that purpura sometimes results in necrosis and ulceration of the skin and mucous membranes, we are unable to find any reference to the occurrence of haemorrhagic gangrene of the skin in chronic lymphatic leukaemia.

Case History

A 58-year-old male librarian was admitted on October 5, 1952, having been found unconscious in his garden. There was a past history of chronic bronchitis. A provisional diagnosis of subarachnoid haemorrhage was confirmed by lumbar puncture. During routine examination he was found to have moderate splenomegaly but no palpable glandular enlargement, and there were no other abnormal signs. A blood count showed: Hb, 92%; red cells, 4,680,000 per c.mm.; white cells, 12,900 per c.mm. (polymorphs 22%, eosinophils 0.5%, monocytes 1%, lymphocytes 76.5%); no primitive forms; platelets, 168,750 per c.mm.; E.S.R., 1 mm. in the first hour (Wintrobe); clotting-time, 6 minutes 30 seconds; bleeding-time, 3 minutes. A sternal marrow puncture showed a typical picture of chronic lymphatic leukaemia.

As it was uncertain whether the subarachnoid haemorrhage was in any way connected with the leukaemia, and as the leukaemia was symptomless, with the possible exception of being related to the subarachnoid haemorrhage, it was decided not to treat the patient at this stage. He was discharged in November, having made an uneventful recovery from the subarachnoid haemorrhage, and he was seen regularly as an out-patient.

In January, 1953, he was readmitted to hospital with a three-days history of fatigue with fever and the coughing up of sputum flecked with bright blood. On examination he was wasted and there were symmetrical localized areas of ecchymoses over both upper arms and both malar eminences. The only other abnormal physical finding was splenic enlargement, which was of the same degree as on the previous admission. A blood count at this time showed no marked change from the previous count, and the bleeding- and clotting-times were still within normal limits. The possibility of a leukaemoid reaction to generalized tuberculous infection was considered, and accordingly the sternal marrow was re-examined in February, 1953. No evidence of tuberculous histology was seen, and the appearance was still that of a lymphatic leukaemia. A chest x-ray examination showed extensive cavitation in the right upper lobe, but repeated sputum tests and examination of laryngeal swabs did not reveal any evidence of tuberculosis.

The skin lesions became more numerous. Each would start as a small patch of purpura which enlarged rapidly

and then developed superficial gangrene. Progressively and symmetrically they involved the pinnae, arms, forearms, buttocks, legs, and toes (see Fig.).

"Acthar gel," in a dose of 50 mg. 12-hourly intramuscularly, was begun, but two days later the patient went into coma and died on February 8.

Necropsy Findings.—**External Examination:** There was a dark-purple discoloration of ears and face, except for the circumoral area, with ulceration of both ears and cheeks. Dark-purple patches were present in the region of both nipples, on the outer side of both arms, with ulceration of the upper arms, on both buttocks, and on the outer side of both thighs and legs, with purpuric spots at the border.

Circulatory System: A large pericardial effusion was present consisting of clear yellow fluid. **Respiratory System:** The lungs were emphysematous, with a cavity in the right upper lobe approximately 2 cm. in diameter, and an adjacent dark solid area with a hyperaemic border showing central softening. There was no macroscopic evidence of tumour. **Digestive System:** The liver was enlarged (weight 2,326 g.) and extensively infiltrated with pale semi-translucent nodules. These swelled above the cut surface, and were approximately 1 cm. in diameter. **Haemopoietic System:** Lymph nodes around the coeliac axis and at the hilum of the spleen and para-aortic nodes were prominent. Cut surface was mottled, with reddish areas. The spleen (weight 1,162 g.) showed a pale cut surface with prominent Malpighian bodies. **Nervous System:**

Photograph showing skin lesions in the early stages.

An intact berry aneurysm arose from the anterior communicating artery of the circle of Willis. Adjacent to the aneurysm there was brownish discoloration of the arachnoid.

Histology.—**Right Lung:** An old infarct was present with central necrosis and peripheral haemorrhage and infiltration with lymphocytes and polymorphs. Elsewhere there were foci of lymphocytes. **Liver:** Lymphocytic infiltration had occurred and there were many deposits of irregular polygonal-celled trabecular carcinoma with a fine stroma. Mitoses were numerous. The appearances were those of metastases of an aplastic bronchial carcinoma. **Spleen:** Pulp spaces and sinusoids were distended with lymphocytes. **Coeliac Lymph Node:** Germ centres were no longer distinguishable, and the whole node was packed with lymphocytes of adult type. **Skin:** Both superficial and deep corium contained small recent haemorrhages, and in the same situation the veins contained organizing thrombi. The arteries appeared normal. There was no leukaemic infiltration.

Comment

Progress of the skin condition to extensive symmetrical gangrene had occurred as a terminal event, and it is difficult to assess the degree to which this contributed to the patient's death, particularly so when the double pathological condition found at necropsy is considered. Carcinoma, especially of the bronchus, is common nowadays, and

chronic lymphatic leukaemia is by no means rare, so that the association of the two conditions in the case here reported is probably fortuitous. Nevertheless, only 27 cases of carcinoma with leukaemia had been reported up to 1950 (Berk and Movitt, 1945; Even, Vibert, and Oury, 1950). In our case no primary growth was found in the lungs or in any other organ, but the histological appearance of the deposits in the liver was suggestive of primary carcinoma of the bronchus.

We wish to thank Dr. A. R. Kelsall for permission to publish this case.

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THE EPIDEMIOLOGICAL APPROACH TO OBSTETRIC MEDICINE*

BY

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The annual report of a well-known teaching maternity hospital says that it had 1,413 admissions during the year 1950. These contributed 1,270 deliveries and 85 abortions. The stillbirth rate was 9.34 per 1,000 (an exceptionally low figure) and the neonatal death rate 17.32. In 31 tables are listed some of the features of numerous abnormal cases. How cases were chosen for admission and how they relate to the community as a whole are not indicated. The clinical detail presented is reduced to a bare minimum and there is no text or discussion whatever. The lay-out and scope of such annual reports are time-honoured, but make it very difficult to extract figures of scientific value. The time has surely arrived when all statistical reports should be drawn up according to the laws of epidemiology. Now that maternity services are organized on a regional basis, the leading hospital in an area might collate data from all sources and prepare reviews illustrating and discussing trends of morbidity and mortality in a defined population.

Maternity records are particularly suitable for systematic surveys because birth and death certification provides an automatic and accurate statistical framework for every administrative area. There is little difficulty, of the kind which arises in the study of chronic disease, in arriving at a biologically meaningful epidemiological "unit." A "maternity"—the cycle of pregnancy, childbirth, and recovery—is easily defined, and takes place in a limited and relatively constant period of time.

The group of maternities to be studied having been defined, the next step is to classify them. To reduce the population to a series of fairly homogeneous groups it is desirable to classify by legitimacy; by the maternity service to which a case has been booked, irrespective of the place of delivery; and perhaps by home address, if it is desired to limit the study to the residents of an area. Multiple maternities should be separated from single.

*Read in the Section of Preventive Medicine and Infectious Diseases at the Annual Meeting of the British Medical Association, Glasgow, 1954.