

The findings in this patient are similar in some ways to those in Glanzmann's syndrome, von Willebrand's disease, and to the platelet dysfunction seen in uraemia and dysproteinaemias such as myelomatosis and macroglobulinaemia. The failure of platelet aggregation by collagen and adrenaline is similar to that found in Glanzmann's syndrome, but the normal clot retraction and normal platelet aggregation by high concentrations of adenosine diphosphate would exclude that condition. It is similar to von Willebrand's disease in the long bleeding time and the reduced in-vitro platelet adhesiveness by Salzman's method but differs from that disease in the normal concentration of factor VIII and the impairment of platelet aggregation by collagen and adrenaline. The patient was neither uraemic nor dysproteinaemic. This case bears certain similarities to the cases described previously by others.⁵⁻⁹ It also emphasizes the fact that the platelet defect resembles that induced by ingestion of aspirin, and it is therefore important to make sure that patients in whom such abnormalities are found have not been taking aspirin or other anti-inflammatory drugs.

Other than easy bruising and occasionally prolonged bleeding from superficial cuts, Sahud and Aggeler's patient had no other evidence of a bleeding tendency. She had survived to middle age with remarkably little disability, having undergone tonsillectomy, appendicectomy, and extraction of molar teeth; her menstrual periods had been normal and she had had three uneventful pregnancies. The authors postulate that perhaps the small stab wound used to determine the bleeding time exposes an insufficient amount of subendothelial collagen to induce platelet aggregation readily, whereas in major operations the ratio of exposed collagen to platelets may be large enough to overcome this particular kind of platelet dysfunction.

More Blackwater Fever

Blackwater fever is reappearing in areas where it had become rare. This news has important implications both for indigenous inhabitants of malarial regions and for the many short-term visitors going there by modern jet travel. D. C. Dukes and colleagues¹ have reported that it is now seen again in Central Africa after being uncommon there for many years. In Rhodesia, where it is notifiable, not a single case was recorded from 1955 until 1964, but Dukes and his colleagues encountered six between 1965 and 1967. Whereas formerly it was seen only in Caucasians, it is now encountered mostly in Africans.

In their cases deficiency of glucose-6-phosphate dehydrogenase was excluded as a cause of the haemolysis, and a special feature was renal failure with oliguria. This was successfully treated in five of the six patients by haemodialysis; in one recovery followed 33 days of oliguria and in another 21 days. This method of treatment, introduced by R. C. Jackson and A. W. Woodruff,² is becoming increasingly recognized as an important advance in the management of such patients and has saved many lives.

¹ Dukes, D. C., Sealey, B. J., and Forbes, J. I., *American Journal of Medicine*, 1968, 45, 899.

² Jackson, R. C., and Woodruff, A. W., *British Medical Journal*, 1962, 1, 1367.

³ Shute, P. G., and Maryon, M., *British Medical Journal*, 1969, 2, 781.

Other lessons to be learned from this study include the need to be aware that severe falciparum malaria with renal failure can attack the inhabitants of malarial areas where control has been established. Paradoxical though this situation may seem, it arises because only among persons with a low level of immunity to malaria do blackwater fever and severe *Plasmodium falciparum* infections occur. After malaria is brought under control in a place the level of acquired immunity falls among people living there, and while the general incidence of malaria drops its severity increases among those who do acquire it. Further, in some countries, such as Ceylon, malaria control has within the past two years partially broken down, and millions not exposed to it for a decade are now becoming infected.

Blackwater fever is rare, possibly non-existent, among persons who take an adequate prophylactic dose of one of the synthetic antimalarials, such as chloroquine, proguanil, or pyrimethamine. Among visitors to malarial regions to take such a prophylactic is the most important means of preventing it. There is evidence that quinine is more likely to precipitate it than are the synthetic antimalarials. In the treatment of patients with malaria attention to hydration is important, for dehydration may favour the development of renal failure. Once blackwater fever has developed, correction of imbalance of fluids and electrolytes and provision of haemodialysis when uraemia is present are paramount. Transfer of the patient to a centre where these are possible is therefore an urgent matter. The patients withstand travel well, and without movement to a centre where these facilities are available the prognosis is grave. For those with cerebral symptoms prompt administration of large doses of dexamethasone—for example, 10 mg. intravenously—may be followed by dramatic improvement.

The incidence of malaria in Britain at the present time is showing a tendency to increase,³ and among severely affected patients oliguria and cerebral manifestations are not uncommon. The need to be on the look-out for such cases is apparent. Indeed, awareness of the possibility of malaria is the key to preventing severe attacks, as treatment in the early stages is simple. Malaria would cause few problems if doctors invariably asked patients whether they had recently travelled abroad and, on the answer "Yes," immediately thought of tropical disease.

Training to Survive

The sad loss of Donald Crowhurst somewhere in the Atlantic is a reminder that adversity can impose mental stresses as severe as any physical blows that a hostile environment can offer. But, though they vary in their capacity to meet them successfully, men can be trained to do so with great benefit. And in the possession of a natural aptitude for survival even in extreme conditions women may on the average surpass men.

The balance between physical and mental endurance has often been observed among the survivors on a raft or in a lifeboat after a disaster at sea. Men alone or in groups cast away at sea face increasing hazards which take toll of their physical and emotional stamina. They may be injured at the outset; they may suffer thirst, hunger, seasickness, exposure, cold, or the blistering heat of the tropical sun. They may be overcrowded, continually battered and

drenched by waves or spray, encrusted with irritating salt, and develop boils and sores, parched throats, and swollen tongues, lose strength when it is most needed, suffer cramps, sleeplessness, and heartbreaking fatigue. On top of these physical burdens they may suffer fear, loneliness, a sense of inadequacy, bad dreams, muscular incoordination, delusions, and hallucinations. The last can be expected when there has been lack of sleep for 48 hours, especially in seriously adverse circumstances, and they take such bizarre forms as beckoning figures inviting the survivor to leave his situation of plight for promised comfort.

In extreme environments on land—for example, when lost in desert or jungle—the victim of hallucinations may wander aimlessly or creep into a hole to escape the immediate harassment. But at sea to leave his raft or boat is to drown. Furthermore the cold of the northern waters can kill in minutes, while in the warmer tropical and subtropical waters sharks are waiting. They stay with lonely survivors knowing that sooner or later one will slip over the side. Sometimes they have a role in the hallucinations, being part and parcel of the tempting fantasy. Wise and well-trained mariners know this and are conditioned to ignore their hallucinations.

The importance of morale and mental training for people who undertake challenging adventures needs emphasizing. Experience has shown that when they face serious stress the inexperienced ones may suffer fear and panic, become violent, and throw their lives away. The more seasoned ones will endure the hardship. But if despair and fatigue prevail they may slip gently over the side and swim away or fall prey to their hallucinations. In one reported incident an exhausted seaman told his companions that he was “chucking it in,” shook their hands, and quietly left the raft. The others were too weak to restrain him. But many have survived these mental ordeals and helped their companions to do so by their example and control. Years of disciplined service at sea have stressed the importance of routine, of filling idle hours with enforced activity and interest, of songs and stories while strength lasts, and later prayer. The hours of darkness are the worst, and lashing to a seat or mast may keep the survivor in his boat. If the mind does not break, the body will take an astounding degree of punishment. Those responsible for the training of secret agents know this well.

Prognosis for Babies Born to Diabetic Mothers

The incidence of detected diabetes mellitus is probably increasing and likely to continue to do so.¹ Detection drives have shown in Western Europe and in the U.S.A. an incidence of about 13 per 1,000 population, of whom half were previously not known to have the disease. With careful control during pregnancy the high rates of stillbirth and neonatal death associated with maternal diabetes can be considerably reduced, but little is yet known about the progress of the surviving children. A reduction in perinatal mortality is all the more gratifying if it can be shown that there is no excessive morbidity among the survivors.

J. W. Farquhar² has now reported the outcome of all viable pregnancies in diabetic mothers at the Simpson Memorial

Maternity Pavilion in Edinburgh between 1948 and 1966. The group comprised 329 infants, and follow-up was attempted on the 260 who survived the neonatal period. That 98% were traced is surely a remarkable achievement.

Two survivors are now themselves diabetic, an incidence of 0.77 per 100. This figure is more than 20 times greater than would be expected for the general child population in Scotland. P. White³ found that 9 of every 100 children in her Boston study were already diabetic by adolescence, but this high figure was not repeated in surveys from Sweden and Australia. Two others of the Edinburgh children have older siblings who are already diabetic. Sir John Peel¹ has pointed out that the assessment of the true incidence of diabetes among survivors may not be completed for some years yet, since the maximum age incidence of the disease is in the late fifties and insulin had been in use only since 1922.

Farquhar searched diligently for congenital abnormalities in the stillbirths, in the neonatal and later deaths, and among the survivors. Lethal malformations were present in 1.5% of all births. The incidence of significant malformations was 8.8% in all who survived the first month. He had previously⁴ compared the incidence of abnormalities up to the age of 12 years in 135 children of diabetic mothers who survived the neonatal period with that in a group of carefully matched controls. There was little difference in the incidence of abnormality in the two groups. C. Watson,⁵ in a similar study from London, found no significant difference in incidence between her maternal-diabetic and control groups, but found a tendency for the congenital abnormalities associated with maternal diabetes to be more severe. On the other hand, L. M. Pedersen and colleagues⁶ found in their series from Copenhagen that the overall incidence of abnormality was three times as high as that in the general population. White³ reported the remarkably high incidence of 13% in contrast to an expected incidence in Boston of 1.8%. The principal types of abnormality found have shown considerable variation in the different series. This is to be expected, because the relative incidence of different congenital abnormalities varies considerably throughout the world and indeed in different parts of Great Britain.⁷

The heights and weights of Farquhar's survivors are of considerable interest, especially in view of the large size of these infants at birth. The present heights and weights of most of them fall within the normal range, but excessive weight for height was a common finding. This was not, however, noted in either of the two children already themselves diabetic.

Farquhar has given an encouraging prognosis, and this is something that doctors can pass on to the diabetic mothers in their care. It is well known that the successful outcome of pregnancy in the diabetic mother depends on close co-operation among physician, obstetrician, and paediatrician. But the patient herself must be willing to accept the advice offered her, and an encouraging prognosis can surely be a help here.

¹ Peel, J., in *Recent Advances in Obstetrics and Gynaecology*, 1966, 11th ed., ed. J. Stallworthy and G. Bourne. London, Churchill.

² Farquhar, J. W., *Archives of Disease in Childhood*, 1969, 44, 36.

³ White, P., in *The Treatment of Diabetes Mellitus*, 1959, 10th ed., p. 690, ed. E. P. Joslin, H. F. Root, P. White, and A. Marble. Philadelphia, Lea and Febiger; London, Kimpton.

⁴ Farquhar, J. W., in *Recent Advances in Paediatrics*, 1965, 3rd ed., p. 121, ed. D. Gairdner. London, Churchill.

⁵ Watson, C., *Archives of Disease in Childhood*, 1968, 43, 746.

⁶ Pedersen, L. M., Tygstrup, I., and Pedersen, J., *Lancet*, 1964, 1, 1124.

⁷ Butler, N. R., Alberman, E. D., and Schutt, W. H., in *Perinatal Problems*, 1969, ed. N. R. Butler and E. D. Alberman. Edinburgh, Livingstone.