JAUNDICE IN A MEDICAL WARD IN SUBTROPICAL AFRICA*

MICHAEL GELFAND, *C.B.E.*, M.D., F.R.C.P., *Professor of Medicine, University College of Rhodesia*

It would be useful to know the frequency with which the different causes of jaundice can be expected in Africans admitted to hospital in a subtropical country like Rhodesia. Perhaps it may be felt that a true general picture of jaundice might not be obtained if only the cases in a medical ward were studied. This is not altogether true, since cholestatic jaundice is very uncommon in the African, except, perhaps, that occurring in early infancy.[1] In any case the tendency is to admit a patient with jaundice to a medical ward in the first instance and, after the nature of the jaundice has been determined, if an obstruction is suspected, to ask for a surgical opinion.

Over years of practice in the wards of Harare Hospital in Salisbury I have come to appreciate that icterus, although very commonly encountered there, has a somewhat different aetiology from that met with in Whites living in Central Africa. For instance, while infective hepatitis is sufficiently common in both races, cirrhosis and primary carcinoma of the liver are much more frequent in the African. Again, sickle-cell anaemia is not met with in the White, but jaundice due to thalassaemia is seen in Whites of Mediterranean stock. Yet, as far as my experience is concerned, thalassaemia is not seen in Africans of these regions. Jaundice in lobar pneumonia in Whites is far more uncommon than in the African. On the other hand, I have rarely encountered posthepatic jaundice due to gallstones in the African. The picture in the two races appears to be very different.

As a rule there is no difficulty in recognizing the icterus, and in all cases in this study a serum bilirubin estimation was performed. Only if we were satisfied that the patient was definitely jaundiced, albeit slightly, was he included in the series.

METHODS AND PROCEDURES

In this investigation of jaundice, only African patients admitted consecutively under my care were included. As a rule there was no difficulty in recognizing icteric changes in the sclera. Liver-function tests were useful in assessing responses to treatment but of limited value in determining the nature of the jaundice. Other special investigations were carried out only when the diagnosis remained obscure.

In addition to the clinical examination, the urine, stool and blood were investigated in order to determine the type of jaundice. These investigations included the presence or absence of bile pigment in the urine and stool and the total amounts of conjugated and unconjugated bilirubin in the serum. Liver-function tests generally included total serum proteins with the albumin and globulin fractions, flocculation tests and transaminase enzymes (SGOT and SGPT). Other biological tests, such as liver aspiration and biopsy, and radiological investigations were performed where indicated. In some of the cases the diagnosis was reached at laparotomy or at autopsy.

There were 107 cases (81 males and 26 females) affected with jaundice. Most were adults, but there were a number of juveniles and older children. Table I shows the different conditions found with jaundice.

TABLE I. ANALYSIS OF CASES

Cause of jaundice	*Male*	*Female*	*Total*
Hepatic			
Infective hepatitis	26	14	40
Cirrhosis of liver	23	4	27
Primary carcinoma of liver	8	1	9
Liver abscess	-	1	1
Haemolytic anaemia	6	1	7
Lobar pneumonia	9	1	10
Malaria	3	1	4
Obstructive jaundice	2	2	4
Undetermined	2	1	3

DISCUSSION

It can be seen that in no less than 79 out of 107 cases (73·8%) the jaundice was hepatic in origin.

Cirrhosis of the Liver

Cirrhosis of the liver is perhaps one of the most common visceral disorders encountered in Mashonaland, and so it is not surprising that jaundice due to this cause is not an infrequent finding.

In a separate series of 50 consecutive cases of hepatic cirrhosis, 13 were found to be jaundiced. In the same series 12 patients developed a hepatic encephalopathy, 4 of whom were icteric. Ascites was noticed in 28 of the cases, in whom 9 had raised serum bilirubin values. In other words, all 13 jaundiced patients had one or other of the severe complications of liver cirrhosis. Splenomegaly occurred in 19 of the cases with cirrhosis, and in 4 of them icterus was a feature.

Acute Infective Hepatitis

The onset in hepatitis is usually heralded by a short illness, perhaps resembling the common cold, and vomiting, but these symptoms may not be so striking in the African. The transaminase enzymes are greatly elevated, in contrast to the jaundice, and are associated with cirrhosis. Points helpful in the differentiation of cirrhosis from hepatitis (in which the prognosis is generally good) are: an irregular and hard liver; an easily palpable, hard spleen; enlarged collateral veins, such as oesophageal varices as shown by barium swallow or oesophagoscopy, a visible epigastric vein or caput medusae (rare); and ascites.

Carcinoma of the Liver

The diagnosis is not difficult, although at times it is not easy to differentiate between primary carcinoma of the liver and cirrhosis. In liver cancer the patient is expected to be much more wasted and experiences severe pains in the upper abdomen. Further, a big, hard liver mass (a sign to which I attribute great significance) is generally detected, but enlargement of the spleen is rare. The spleen is enlarged in only a few of my patients with carcinoma of

*Date received: 15 August 1968.

the liver. Thus, out of a series of 40 consecutive cases of liver cancer (in which the diagnosis was confirmed in the great majority of cases either at autopsy or by liver biopsy), 19 were jaundiced (47·5%). This was more common than in cirrhosis of the liver (26%). Only 3 had splenomegaly (2 of whom were icteric), which was far more frequently encountered with cirrhosis of the liver. Ascites was found in 12 cases (30%), whereas it was present in 56% of my series with cirrhosis of the liver; 4 of these cases were jaundiced.

Acute Yellow Atrophy of the Liver

Acute yellow atrophy of the liver is a real entity though rare. It is not easy to recognize, except that the patient is very ill and usually becomes worse and worse, eventually passing into coma. Perhaps the most vital clue to the recognition of this disorder is the extent of the liver dullness, which steadily diminishes. This sign itself is not an easy one to elicit in the presence of tympanites. The jaundice is intense, and frequently bleeding occurs from the nose or into the skin. Death usually follows and the diagnosis is often confirmed at autopsy.

Liver Abscess

At one time it was my impression that jaundice did not occur in amoebic liver abscess, but this is not so. It is seen occasionally and I have encountered a few cases, mostly in women, but the numbers were too small to definitely support such a sex difference. In the present series there was one case. In a series of liver abscess, previously studied, jaundice appeared in only 2 out of 53 cases.[2]

Haemolytic Jaundice

This is not altogether rare and may be on the increase, since treatment with 4'amino-quinoline for acute malaria —for cases in which it is suspected or indeed for any patient with a high fever—may precipitate an attack of acute haemolytic anaemia with the passage of haemoglobin in the urine. In at least 4 of my cases the haemolysis was probably induced by this drug. One male patient, aged about 48 years, had lobar pneumonia, another aged about 25 years had typhoid fever, and a third young man of about 21 years had severe acute cerebral malaria. The last patient was given quinine intravenously, but when he was on the road to recovery I put him on 4'amino-quinoline, which apparently triggered off the haemolysis. The fourth patient, a man aged about 40 years, had a high fever with jaundice and developed acute haemolytic anaemia. He had been given 4'amino-quinoline for supposed malaria before admission to hospital and was found to have a glucose-6-phosphate dehydrogenase deficiency enzyme. All these patients might have been thought to have blackwater fever, but I would prefer to regard the haemolysis as a reaction to drugs and unrelated to malaria. It has been suggested that we can expect an increasing number of cases with blackwater fever in our African population, owing to the loss or diminution of immunity through coming to urban areas with little or no malaria, thus lessening the state of premunition.

Apart from these cases of haemolytic jaundice there were 3 patients with sickle-cell anaemia in the series.

Acute haemolytic anaemia is not easy to recognize. An increasing degree of anaemia in a patient who is icteric in the sublingual region and conjunctivae should cause the clinician to consider a haemolytic process. Another useful sign in many cases is the appearance of a splenomegaly during the course of the illness. This is not an absolute indication of a haemolytic state, as it may occur in infective hepatitis, but if a splenomegaly is seen within a few days after the patient was first examined this possibility should be borne in mind.

Jaundice in Acute Malaria

It is worth noting that there were 4 cases in the series with acute malaria associated with definite jaundice, and since in each the jaundice responded promptly to the appropriate treatment it would be fair to assume that in these cases it was caused by the malarial parasite. It might be tempting to include them in the haemolytic group, but then the haemolysis is generally mild, amounting to merely a lemon tinting of the conjunctivae. When the jaundice is marked it is more probably caused by an attack on the liver, producing that special disorder of the liver referred to as 'bilious remittent fever'. It might be better to place these few cases in a separate group until more investigations can be carried out into the nature of the jaundice itself.

Jaundice in Lobar Pneumonia

Jaundice associated with lobar pneumonia should be classified separately. There were 10 such cases (9 male and 1 female). The cause of the icterus in lobar pneumonia remains a mystery. No-one has yet shown clearly whether it is hepatic in origin, although this might be the favoured hypothesis.

The frequency of jaundice and pneumonia has been noted in the American Negro, and in the African the association has been remarked upon by Wazir,[3] by Trowell[4] in Kenya, and Gelfand and Lewis[5] in Rhodesia.

Obstructive Jaundice

Obstructive or cholestatic jaundice accounted for only 4 cases (2 male and 2 female). In both men and one of the women it was attributed to a carcinoma of the pancreas and in the other woman to a chronic pancreatitis.

In most other parts of Africa, with the possible exception of Nigeria and the Sudan, cholelithiasis as a cause of jaundice is most infrequent. Parnis,[6] who studied the incidence of gallbladder in Nigeria over a 5-year period, found no less than 25 patients with gallstones. He also notes that gallbladder disease is not uncommon in the Sudan, where both acute and chronic cholecystitis appear and can be as frequent as among English women. Most other observers, however, refer to the rarity of cholelithiasis in the African population. Lopis[7] found 50 cases of this condition in 1,677 African autopsies in Johannesburg, and 10 instances were found in another series of 1,000 autopsies.[8] In my series the calculi were mainly of the pigment variety and hence their possible causation by previous attacks of malaria was suggested.

Vint[9] found gallstones infrequent in the African of Kenya and this was confirmed by Owor,[10] who found the incidence of cholelithiasis and gallstones very low (0·87%) at autopsy in Kampala. Most of the stones were of the pigment variety and pure cholesterol ones were rare.

According to Lawson,[11] pancreatitis is exceptionally common in the African and an important cause of upper abdominal pain. Icterus might occasionally be encountered in the chronic form of pancreatitis, but how often this condition leads to biliary obstruction I am unable to say.

Kark[12] described the occurrence of bilharzial stricture of the common bile duct in 3 males in Durban over a period of 2 years. But, as far as I am aware, this complication of bilharziasis has not been recorded in Rhodesia.

SUMMARY

The frequency of the causes of icterus in 107 admissions to an African medical ward is given. By far the most common were hepatic in origin, but rarely an obstructive cause could be demonstrated. The association of lobar pneumonia and jaundice was fairly common. Acute haemolytic anaemia with haemoglobinuria is not infrequently encountered and some of these cases seem to have been precipitated by the administration of 4′amino-quinoline.

REFERENCES

1. White, J. A. M. (1959): Cent. Afr. Med. J., **5**, 583.
2. Gelfand, M. (1966): Cent. Afr. J. Med., **12**, 211.
3. Wazir, C. (1924): Kenya Med. J., **1**, 8.
4. Trowell, H. C. (1932): E. Afr. Med. J., **9**, 258.
5. Gelfand, M. and Lewis, B. (1942): S. Afr. Med. J., **16**, 436.
6. Parnis, R. O. (1964): Trans. Roy. Soc. Trop. Med. Hyg., **58**, 437.
7. Lopis, S. (1947): Clin. Proc., **6**, 338.
8. Gelfand, M. (1950): *Schistosomiasis*. Cape Town: Juta.
9. Vint, F. W. (1937): E. Afr. Med. J., **13**, 332.
10. Owor, R. (1964): *Ibid.*, **41**, 251.
11. Lawson, H. H. (1962): S. Afr. Med. J., **36**, 542.
12. Kark, A. E. (1961): Brit. J. Surg., **49**, 419.