

ment, I found 103 bleeding episodes, a rate of one bleed per 133 weeks of treatment, using the APTT expressed in seconds, and a therapeutic range of 50 to 70 seconds, to control warfarin dosage (Eastham, 1972). I submit that the use of the APTT in the form of a ratio inevitably makes the test insensitive and unsatisfactory, and partly explains the results reported by Drs Pearce and Sekar (1973).

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Malignant Hepatoma

Malignant hepatoma is a common neoplasm in Africans in Rhodesia, where it may comprise 4.9 (Ross, 1962) to 10.8 (Gelfand, 1949)% of all malignancies. Ninety per cent of cases appear to originate in patients with cirrhosis (Gelfand, Castle, and Buchanan, 1972) so that there is an obvious clinical need for a diagnostic test to determine when malignancy has developed. We therefore decided to examine the suggestion of Bell and Williams (1964) that a positive result in the Jirgl's flocculation test in patients with cirrhosis should arouse suspicions that a malignant hepatoma had developed. (This test was originally devised by Jirgl (1957) for distinguishing obstructive from hepatocellular jaundice.)

A modification of the technique of Bell and Williams was used, the test being read after 4 hr against a dark background in daylight. The results were reported as negative (clear), + (turbidity), ++ (flocculation), or +++ (precipitation). Strongly positive sera from two cases of obstructive jaundice were used as controls.

Sera were examined from 71 patients from Mpilo Hospital, who required liver function tests, and from 20 patients suspected of having malignant hepatoma at Harari Hospital. The results of the investigation are given in the table.

Ten of the patients at Mpilo were found to have a malignant hepatoma; eight cases were proven by liver biopsy or necropsy while the diagnosis of the other two cases (group A) was made by the cancer diagnostic panel on the basis of the clinical tetrad of a nodular enlarged liver, right hypochondrial pain, a bruit over the liver, and a raised right crus of the diaphragm on chest radiographs. A positive test was found in only two of the 11 hepatoma patients (20%) and two of the 13 histologically proven cirrhotic patients (15%). Neither of these two cirrhotics appears to have developed a malignant hepatoma during the last two years.

At Harari Hospital the diagnosis of hepatic malignancy was confirmed histologically in eight patients and made in an additional five patients on the basis of a positive alpha fetoprotein assay (cross-over electrophoresis technique) and a suggestive liver scan (group B). Only three of these 13 patients (23%) had a positive Jirgl test, whereas at the same hospital it has been found that 69% of hepatoma patients have a positive alpha fetoprotein test (T. C. Ashworth, personal communication); there were no false positives. None of the cirrhotics had a positive flocculation test.

In conclusion, these limited studies have shown that in the Rhodesian African there is only a slight association between malignant hepatoma and a positive Jirgl test and that the alpha fetoprotein test is a more useful diagnostic test. No direct

evidence has been obtained to support the hypothesis that the Jirgl test might be of value in predicting the development of malignant hepatoma in cirrhotics; a longitudinal study with a large number of cirrhotics would be necessary to obtain a definitive answer to this question.

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Diagnosis	Results			
	Negative	+	++	+++
Malignant hepatoma				
(a) Proven	14	2	—	—
(b) Probable	1	—	1	—
A	3	1	1	—
B	18	1	—	1
Cirrhosis				

Table