HEART DISEASE IN THE ELDERLY AFRICAN

BY

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This study attempts to record the forms of heart disease found in the elderly African. In this age group one might expect coronary arterial disease, but it is said to be rare in the African—an alleged rarity that might be due to a different clinical picture in the African. Coronary disease might be overlooked if it were painless, but cardiographic changes would still be present. That this may be so has perhaps been suggested by Williams and Shaper (1960) who in their study on cardiac disease in Uganda refer to nine cases of arteriosclerotic and degenerative heart disease in their series: among them were six elderly Africans with congestive cardiac failure associated with cardiographic changes highly suggestive of myocardial ischaemia or old infarction, although no pain had been mentioned by the patients.

METHOD OF STUDY

Material. For the purpose of this study Africans thought to be 60 years old and older were considered to be elderly. The assessment of age was only approximate, as few Africans of this generation know their date of birth.

Salisbury is a large industrial centre, and therefore most of its African population consists of men between the ages of 20 and 40 years. Consequently far fewer elderly people are seen and they come almost entirely from the districts of Mashonaland and not infrequently even from as far afield as Portuguese East Africa and Nyasaland.

The findings presented in this paper do not necessarily appertain to other African countries. It is hoped that the conclusions drawn may serve as pointers as to what may be the cardiac pattern in the elderly African. None of the patients could be described as educated: they were all of a generation that is still essentially Bantu in outlook and tradition. A feature common to all was their poverty, and since they were also old they were not able to earn or afford an adequate diet. Many were thin and showed certain features of malnutrition, particularly noticeable being a pellagroid dermatosis (Fig. 1). The possible significance of this feature will be mentioned later.

Procedure. Every African from the age of 60 admitted with cardiac disease was included in this series. Cardiac disease was diagnosed where signs attributable to failure were found or damage to the heart was revealed by an increase in its transverse diameter on X-ray or by certain cardiographic changes. The presence of extrasystoles or of a soft systolic murmur without other signs or symptoms was not regarded as significant.

This series included 70 elderly Africans found to have cardiac disease. As a rule it was easy to decide whether or not the patient had heart disease, but it was not easy to determine the underlying pathology. Syphilitic aortic regurgitation was diagnosed on a positive Wassermann reaction. Hypertension was diagnosed if the systolic pressure was 180 mg. Hg or over, and the diastolic pressure 110 mg. Hg or more. Cases with atrial fibrillation were placed in a separate category, unless there was a known cause to account for it. Some of these, so separated, may have been examples of cardiomyopathy, but it was decided not to classify them under this heading since

FIG. 1.—An elderly African who is thin and emaciated and has a pellagroid dermatitis.

FIG. 2.—Severe oedema is quite often a feature in the African, as it is in this man.

atrial fibrillation is an unusual feature of this condition. This study did not include autopsy material owing to the difficulty of obtaining permission for this.

Included in the term idiopathic cardiomyopathy were probably a number of cardiac affections by no means easy to define, such as sub-endomyocardial fibrosis, nutritional heart disease, and cardiovascular collagenosis with parietal endocardial thrombosis. The fibrotic manifestation found in Rhodesia is rarely as severe or as extensive as that recorded by Davies and his colleagues in Uganda, and is more akin to that reported by Gillanders (1951) and others in the Transvaal. As a nutritional cause has not yet been demonstrated, I have avoided this term and would prefer to refer to the condition as idiopathic cardiomyopathy or even as obscure heart disease.

In Rhodesia the macroscopic findings of the heart in idiopathic cardiomyopathy are often minimal, but a careful examination of the endocardial surface of the chambers often yields highly suggestive evidence of its presence (Gelfand, 1958) and conforms more to the cardiomyopathy of Gillanders (1951) in the Transvaal. The heart is slightly or moderately enlarged, mostly due to dilatation for hypertrophy is generally slight. A small effusion commonly fills the pericardial sac. It is, however, when the heart is opened that suggestive signs are to be found on the endocardial surfaces. The essential feature is a thickening or dulling of the endocardium in the early phases, but in more advanced phases it stands out clearly as a white opaque patch of fibrous tissue of varying size. The lesion is located mostly at the apex of the left ventricle, the interventricular septum, the chordæ tendinæ, the papillary muscles, or on the mitral or tricuspid valve cusps themselves. This effect is much less often met with in the endocardium of the right ventricle and right atrium. A thickened and finely rugose appearance of the endocardium of the left atrium, not unlike that found in chronic rheumatic carditis, is a fairly common feature of the cardiomyopathy seen in Rhodesia.

Another characteristic finding is the presence of ante-mortem thrombus that is adherent to the affected parts of the endocardium. These thrombi vary much in size and vintage, even in the same case, and are firmly attached to the endocardium, seldom separating off with embolization.

FINDINGS

Heart disease proved to be an important cause for the admission of elderly patients to hospital, for out of 69 Africans of from 60 years onwards, 31 (45%) showed an affection of the heart. Of the 70 consecutive subjects with heart disease, 51 men and 19 women, the conditions diagnosed are shown in Table I. Of the 70 subjects studied in this series, eleven were 70 years and over and the rest below. None appeared to be over 75 years.

TABLE I
TYPES OF HEART DISEASE

Type of disease	Men	Women	Total number and percentage in brackets	Below 70		70 and over	
				Men	Women	Men	Women
Idiopathic cardiomyopathy	19	6	25 (35·7)	14	6	5	0
Hypertensive heart disease	16	5	21 (30)	13	4	3	1
Syphilitic heart disease	9	1	10 (14·4)	8	1	1	0
Atrial fibrillation	4	4	8 (11·4)	3	4	1	0
Valvular (rheumatic) heart disease ..	2	2	4 (5·7)	2	1	0	1
Calcific mitral regurgitation	0	1	1 (1·4)	0	1	0	0
Cor pulmonale with silicosis	1	0	1 (1·4)	1	0	0	0
Total	51	19	70	41	17	10	2

DISCUSSION

The clinical picture of congestive heart failure in an elderly African differs little in the main from that of the European, except in the degree of œdema and the frequency of ascites. As a rule a good history can be obtained. It is true many patients only refer to swelling of the feet and do not mention breathlessness. This is because they are more concerned about the swollen legs. When questioned, a clear account is given of breathlessness on exertion and some also mention nocturnal dyspnoea. Many refer to a pain or discomfort in the chest just above the epigastrium but the pain is vague and can usually be related to the strain of coughing.

The degree of œdema in many Africans with congestive heart failure is much greater than in Europeans, largely, I believe, because they are admitted so late in the course of the disease (Fig. 2). There may be other factors. Firstly, the swelling in the lower extremities may be more pronounced because of an hepatic cirrhosis, which may be of the cardiac type or the more usual form known as septal or even the less frequent post-necrotic scarring. It is quite likely that in some of the patients the cirrhosis is both cardiac and non-cardiac at the same time. If the picture is complicated by cirrhosis of the liver there is generally a reduction in the albumin fraction, which may also account for some of the œdema. In a few patients there may be a thiamine lack. While the œdema may be pronounced in the lower extremities, it is surprisingly slight on occasions despite the presence of gross ascites and hepatomegaly (Fig. 3). This patient was admitted in congestive failure due to aortic and mitral valve disease, and had a large heart, but despite the ascites the ankles were not swollen: the total serum proteins was 7·4 g. and the albumin fraction 4·8 g. per 100 ml.

Not only is œdema greater in many Africans, but ascites too seems more common and often is so pronounced that we sometimes have to tap our cardiac subjects (Fig. 4 and 5). In this series of 70 subjects with cardiac disease, 51 had cardiac failure and 14 of them (27%) showed a moderate or severe degree of ascites with distended abdomens. The causes of the ascites may be the same as those of the œdema.

FIG. 3.—African woman with congestive heart failure, with gross ascites but no œdema of the ankles.

Aetiology. According to Wood (1956) ischæmic and hypertensive heart disease are the two most frequent forms met with in the elderly European. Of subjects with ischæmic disease 70 per cent are seen between the ages of 50 and 70 years of age, and the peak age incidence of death is 60 years. At least 80 per cent of hypertensive subjects are found to be between the ages of 40 and 70 years, with a peak period between 50 and 59 years. Cor pulmonale seems fairly common in the elderly European as 75 per cent of subjects with this disorder are over 50 years of age. Rheumatic valvular heart disease is not often seen in this age group. Wood mentions that mitral stenosis is infrequent over the age of 50 and less than 10 per cent of cases of aortic regurgitation are encountered after that age. It is possible that syphilis still accounts for a certain number of cases between the ages of 40 and 60 years but over the age of 60 it seems to be rare in Europeans.

A careful study was carried out in India by Vakil (1954), who demonstrated much the same pattern in the Indians he studied as in Europeans except for the higher frequency of syphilis. Between the ages of 60 and 80 years, hypertensive and coronary heart disease together accounted for 58 per cent of those with heart disease: 21 per cent of patients with hypertensive cardiac disease were over 60 years whereas 43 per cent with coronary heart disease were between the years of 60 and 80. Chronic cor pulmonale was common and 22 per cent of cardiac patients over 60 suffered from this complication. Vakil found no rheumatic valvular disease in patients over 60 but syphilis (aortic regurgitation or aneurysm) accounted for 8 per cent of his total cardiac patients in the same age group. No cases of congenital heart disease were found in his series or in the series I have studied.

When comparing the findings in this series on Africans studied in Rhodesia with Europeans, I am struck by the total absence of coronary heart disease. Not only was I unable to

demonstrate a single case clinically but the cardiographic changes typically associated with the conditions were absent too. The second interesting finding was the large group here called idiopathic cardiomyopathy or obscure heart disease. The next most common form of cardiac disease was the hypertension, while syphilitic disease came third. No case of myxœdema or of pericarditis was encountered.

The reason for the rarity of coronary heart disease may be the low incidence of atherosclerosis

TABLE II
CASES OF HEART DISEASE IN INDIAN AND AFRICAN SUBJECTS FROM 60 YEARS ONWARDS COMPARED

	Rheumatic	Syphilitic	Hypertensive	Coronary heart disease	Chronic cor pulmonale	Miscellaneous
India (Vakil, 1954)	0	8	28	30	22	12
Author's figures (S. Rhodesia)	6	14	30	0	1	13*

* Plus 36 per cent with idiopathic cardiomyopathy.

FIG. 4.—Gross ascites associated with heart failure.

FIG. 5.—The ascites is less pronounced than in Fig. 3: ascites of this degree is fairly common. The circular skin lesions are due to cupping by a witchdoctor.

in the Bantu. Most pathologists, as well as physicians from various centres in Africa, seem to agree that atheroma, especially in its more severe form, is very uncommon. From post-mortem material, Becker (1945) and Higginson and Pepler (1954) of South Africa found atherosclerosis and coronary occlusion to be rare. Davies (1948) made the same observation from Uganda, and recently Hannah (1958) in the Copper Belt, Northern Rhodesia, recorded that while the Bantu was not immune to coronary atheroma, he developed it less frequently and less severely than the European living in the same region.

But the main interest in this series is the so-called idiopathic heart failure. Unfortunately much uncertainty exists as to the exact meaning of this term. It embraces several entities, each possibly related to the other. These are subendomyocardial failure (described notably by Davies of Uganda), nutritional heart disease (Gillanders, 1951), cardiovascular collagenosis with parietal endocardial thrombosis (Becker *et al.*, 1953), idiopathic hypertrophy of the heart in Africans (Altman and Stein, 1956; and Grusin, 1957) and last, but not least, reversible heart failure in Africans (Grusin, 1957).

Except, perhaps, in the acute reversible form of heart failure due to thiamine lack, it is virtually impossible for the clinician to institute a satisfactory regime of treatment in these conditions. Gillanders (1951) claimed that many of his patients improved with a better diet, especially when protein was added, but there is little support for this claim. Grusin (1957) published his findings on 16 Africans with acute heart failure and described three forms of the disease: one group of 3 patients responded rapidly only when put to bed with a thiamine-free diet; in another group of 10 patients, essentially alcoholic and thought to have beri beri, the heart became smaller only when thiamine was added to the diet; and the third group failed to respond to thiamine but proved best on digitalis and mercurials.

It is possible that a number of cases included in the term idiopathic cardiomyopathy improve with thiamine, but this is rare in my experience. Gillanders and Grusin's observations offer some

measure of hope that the group of obscure heart disease may be reversible. Further research is needed into the dietetic aspects of treatment for these cases.

SUMMARY

Heart disease in the elderly African is common. Coronary thrombosis was not encountered in my series, and chronic cor pulmonale appears to be much rarer at this age than in the European. On the other hand idiopathic cardiomyopathy or "obscure heart disease" is common and 36 per cent of patients were placed in this category. There is a very urgent need in Africa to investigate this form or forms of obscure heart disease.

The elderly African who has congestive failure has often gross œdema and a large proportion are admitted with a distended abdomen due to an ascites. Cirrhosis of the liver (probably being central (cardiac) or septal or post-necrotic scarring in different degrees) is also commonly encountered.

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